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FACTORS RELATED TO ACCEPTANCE OF INNOVATIONS IN BANG CHAN, THAILAND

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ANALYSIS OF A SURVEY CONDUCTED BY THE CORNELL CROSS-CULTURAL METHODOLOGY PROJECT, MAY 1955

Rose K. Goldsen and Max Ralis

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FOREWORD

Having two portraits of a community produced by two different field workers is itself a signal event in anthropology, but to have two portraits of the same subject by workers using different methods is unique. A portrait of Bang Chan is being made in traditional style under the Cornell Thailand Project, using unstructured interviews and intuitive judgment to reach generalizations. In contrast this data paper suggests a photograph of a detail made with Dr. Max Ralis as cameraman and Dr. Rose K. Goldsen as darkroom expert who hands us the final print. Dr. Goldsen is Co-Director of the Cornell Cross-Cultural Methodology Project; Dr. Ralis, Field Director of that project.

Dr. Ralis visited Bang Chan in May, 1955 where, after preparing his questionnaire, he proceeded with the assistance of specially recruited interviewers to visit every household in the community within the course of four weeks. His task was facilitated by advice from orthodox field workers in formulating the questions into colloquial Thai as well as in selecting the relevant indices for inquiry. The details of training interviewers and collecting data appear in the Appendix. Then with suitcase bulging with completed schedules he returned to Ithaca and completed preliminary tabulation of the results before being called away to new work. He left the legacy of further analysis to Dr. Goldsen who produced the present study without benefit of first-hand knowledge of Bang Chan.

The problem was to see if these data could be used to analyze which populations in Bang Chan benefited from agricultural innovation and modern medical facilities and to distinguish how this group might differ from the remainder that did not avail itself of the new. The survey of the acceptance of innovations in Bang Chan parallels similar studies conducted by the Cross-Cultural Methodology Project in other areas where Cornell maintains field stations: Peru, India, and Nova Scotia. The aim of this project is to determine the cultural conditions under which customarily used methods of data-gathering are analytically useful, and to develop techniques for adapting these methods to the demands of varying cultural milieux. Bang Chan provided a laboratory, so to speak, to test the analytic usefulness of the social survey in a cultural context that varied considerably from Western culture, where survey methods have been developed. As one also interested in this aspect of Bang Chan, I found her steps in identifying the content of innovation a fascinating sequence. Field workers are prone to generalize after a few visits.

121 I recall seeing portable motors stored in some Bang Chan houses and
[243 can still picture many threshing floors with neatly layered heaps
[246 of rice straw where the mushrooms grew. A few of these apparently
"progressive" farmers had special ponds to which they proudly in-
vited me to watch the feeding of the tilapia fish. Occasionally
one of them seized the opportunity of my visit to inquire about
sending a sick kinsman to a Bangkok hospital. Without Dr. Goldsen's
analysis I might easily have been lured to generalize that certain
farmers were "innovation minded."

*177 The survey's evidence against a general "innovation mindedness"
*178 cautioned me to reconsider my impressions. I realized that it would
121 be an oversimplification of the social network in Bang Chan to
621 think of it as containing a group of "progressives" who sought
avidly each new agricultural wrinkle and who pitted themselves
against another group of "conservatives" who resisted change. In-
stead I was led to see some farmers interested in certain new
things, others indifferent to these but interested in other things.
Bang Chan looked more like a mosaic of small groups, each fitting
or rejecting the new according to its circumstances.

*177 Instead of thinking simply of a group of highly motivated,
*178 wealthy farmers who assumed the responsibility of trying out the
243 new for the benefit of their less affluent neighbors, I was
244 alerted to recognize a variety of kinds of innovation. Innova-
tion in growing rice, where one might employ a motor or fertilizer,
differed considerably from earning extra cash during the dry season
by growing mushrooms. The analysis of the survey evidence made me
sensitive to the realization that mushroom culture was clearly a
seasonal activity requiring little investment and open to any
family, rich or poor, that needed cash. Certainly no genuine rice
farmer would permit this extra work to interfere when the rains
called time for ploughing. The finding that no correlation
existed between acceptance of motors and growing mushrooms seemed
in retrospect clear, almost self-evident.

*177 The survey analysis indicating that owning a motor, despite
182 my initial impressions, bears no relation to use of modern medical
244 facilities, made me reexamine my initial impressions. My own
757 studies had made me aware that making a living is a positive
action among Bang Chan farmers: it requires forethought and will.
Health, however, for Bang Chan is a kind of negative entity to be
taken for granted until sickness arrives. Bang Chan has no
vitamin pills nor tonics to maintain health, though all work
actively to relieve sickness. Growing mushrooms and using modern
medical facilities are phenomenally different undertakings. Cer-
tainly the survey analysis in this regard bore out and corroborated
this "thematic" analysis.

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Even at this stage of the Cross-Cultural Methodology Project the value of the survey approach becomes evident. Survey method in an area such as Bang Chan is still too untried to recommend it as an external check against the findings of anthropologists who have lived and worked in the area and have immeasurable checks of internal consistency. But when, as in the present case, survey findings can be used to amplify and modify the impressionistic findings based on qualitative data, they serve to sharpen the anthropologist's perception and to alert him to subgroup differences which his emphasis might overlook or minimize. The hazards of structured interviewing, particularly questions of validity, are too well known to detain us here. The present case, however exemplifies a type of survey analysis that can be of aid to the anthropologist insofar as it makes him reexamine his impressions and break down his overall, modal montage into the more discrete pictures of subgroups. We hope that this sort of collaboration between the survey analyst, usually at the mercy of these hazards, and the anthropologist whose immersion in the culture enables him to interpret the meaning of these responses, will enhance the value of both methods.

We look forward to learning in greater detail where structured interview and further analysis of this type will serve best to advance current research.

L. M. Hanks, Jr.
Director of Research
Cornell Thailand Project

North Bennington, Vermont
May, 1957

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INITIAL ACCEPTANCE OF INNOVATIONS IN BANG CHAN

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The Concept of Acceptance of Innovations

The study of culture change is enlightened by specific investigations of how the members of a community come to accept an innovation, ultimately incorporating it in the fabric of their familiar and accepted cultural ways. The present analysis examines data collected in Bang Chan by means of survey interviews,* to see what light may be thrown on the factors accelerating acceptance of certain innovations in that particular village.

Before turning to the analysis of the data collected in one particular community, however, it is important to make two general, theoretical points: the first has to do with a logical analysis of the elements intrinsic in the concept "acceptance of innovations" by a community or a social aggregate; the second has to do with the underlying logic of the analytic procedure utilized in this paper.

The concept "acceptance of an innovation" may be better analysed if it is broken down into three separate facets. One important facet of "acceptance" is the initial adoption or trial of the innovation by one or more persons of a group. A second facet is the continued use of the innovation. Finally, the third facet can be viewed as the individual's psychological acceptance of the idea of the innovation when it is fully incorporated into his community's way of life.

Both initial acceptance and continued use may be independent of psychological acceptance, and vice versa. An innovation such as contraceptives might be used by individuals (even though it conflicts with concepts already present in the culture). The Salk vaccine might be culturally and psychologically accepted by many, on the other hand, even though they may have no opportunity or desire to use it for themselves or others.

A complete analysis of the concept "acceptance of innovations" would deal with all three of its facets. The present report, however deals specifically with the first two only.

A Note on the Logic of Correlational Analysis

The generalizations reached in the present study are based on statistical correlations of responses collected in a social survey. These generalizations are of two main types. First: the frequency distribution of any given item or variable lead to generalizations

* For a discussion of how the survey was made, see Appendix A.

121 concerning the climate of opinion in the sample studied. The apparent precision of these frequency distributions, however, should not be misleading, for the specific magnitude of any given percentage distribution might have fluctuated considerably, had the questionnaire been worded slightly differently, or had the conditions of administration been slightly varied. These distributions may be considered reasonably accurate, however, within their own context. They cannot be expected to hold true for all time, for all places, or for all instruments; nevertheless, the varying magnitudes within a category (more people say a than say b), and the range of the categories used (almost all; a large majority, more than half, less than half, a small minority, a negligible proportion) can be considered accurate descriptive statements.

Second: the internal relationships between different variables lead to generalizations of greater stability than the frequency distributions. Thus, generalizations describing the way subgroups of the population vary from each other may be considered relatively stable.

Cross-tabular analysis provides evidence for these generalizations, following the logic of the ex-post facto experimental model. The linkage between variables is determined by observing how those members of the sample who differ from each other on the first variable, distribute on the second. It is this kind of analysis which is commonly carried out in studies of epidemiology. Such studies search for the possible correlates of a disease or pathology by means of the same kinds of cross-tabular comparisons. Before the tubercle bacillus has been isolated, it was important to study the relation of the sick and healthy portions of the population to urban and rural residence, family income, living conditions, etc. In the search for causes of traffic accidents, those persons with and those without a record of accidents can be compared in age, drinking habits, time of day or any other characteristics which may lead to significant clues.

The present study follows precisely the same line of reasoning. It examines the reported incidence of use of each of several innovations (not tuberculosis or car accidents) among groups in a community, who differ from each other in important aspects: those who have accepted another innovation compared with those who have not; members of the community who have favorable attitudes towards the new practices compared with those who are negatively disposed; those who are exposed to urban influences compared with those who are not; young people compared with old people, etc. The extent to which the incidence of use of the innovation differs beyond chance expectation in the groups thus contrasted provides a measure of the association or linkage between it and the related variables studied. The design of the present analysis may be presented schematically as follows:

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Design for Analysis

I. Dependent Variables

A. Acceptance of agricultural innovations

1. Motor
2. Fertiliser
3. Tilapia fish
4. Mushrooms

B. Acceptance of non-agricultural innovations

1. Use of clinic and hospital facilities

II. Independent Variables

A. Motivation level (indexed by attitude to each innovation)

B. Role and status factors

1. Economic level
2. Age
3. Family size

C. Communications factors

1. Literacy
2. Exposure to media of mass communication
3. Breadth of social contacts within the community

D. Urban orientation

1. Acceptance of urban patterns
2. Contact with urban centers

E. Capital investment factors

F. Other factors

1. Community integration and identification
2. Religious beliefs and superstitions
3. Personality factors
4. Knowledge of political figures
5. Willingness to perform industrial work

Interpretation of Results

What kind of causal interpretations may grow out of such an analysis? In the first example, tuberculosis, the experimental researcher might point out that further research has ultimately

121 established that none of the correlated factors finally turned out to produce the disease--the necessary condition was a bacillus. Indeed, some of the factors mentioned might be viewed as results of the illness rather than as causal factors. Correlational analysis in a study of this type can establish only that the factors associated with tuberculosis constitute the context within which the necessary condition (in this case the bacillus) was known to operate. In the second example, traffic accidents, it is perfectly apparent that age , or time of day, cannot produce a car accident, but the linkage between accidents and other factors provides portions of the context where accidents occur.

Why is it important to understand this context' Such knowledge can lead to inferences about more direct causation, which serve to narrow down the clinician or experimenter's search for the necessary condition. Indeed, a necessary condition may operate only when it is imbedded in this complex matrix of other related variables--or may even be rendered inoperative when the context is changed. Thus efforts toward change or improvement can be made more effective by being directed to the relevant conditions.

It is essentially this kind of reasoning which underlies the procedure of the present study. Just as in the examples cited, linkages can lead to inferences about causation which may later be checked in the laboratory, so, in the same way, linkages discerned in the present study can lead to inferences about causal factors. They are useful chiefly in providing the context within which the decision to try out these sorts of innovations comes about. In this sense of understanding the context, efforts to produce social change may be made with more understanding of the dynamics.

We may now turn to the data collected in Bang Chan for a study of factors related to acceptance or rejection of innovations within the larger context of a rural community in contemporary Thailand.

THE COMMUNITY AND THE INNOVATIONS

The Scene of Bang Chan

361 Twenty-five miles by highway northeast of Bangkok is situ-
[131] ated the community of Bang Chan. In this section of the central plains the inhabitants live as near as possible to the rice paddies which they till, so that instead of a compact village Bang Chan is a community spreading broadly along the banks of a
[621] canal network which from its two-mile stretch through Bang Chan, covers most of Central Thailand. Under these circumstances precise definition of the community becomes difficult and might be

arbitrary, were it not for the Buddhist temples, a neighboring government-operated primary school, and a few small stores, all of which provide a center for the community. There the inhabitants paddle their boats for religious observances, their children attend school, and anyone with a few minutes gossips over a cup of coffee. These people, furthermore, speak of themselves when outside the community as coming from Bang Chan, and the temple familiarly called "Wat Bang Chan" helps outsiders to identify the particular area.

The community's 1600 inhabitants live in one of seven hamlets, each with an officiating headman who may offer some leadership to the neighborhood. Bang Chan has no political unity beyond the informal influence of the head priest at the temple, for administrative units of local government disregard its social and psychological coherence. On one side of the main canal headmen go a rough two miles to attend meetings with the District Officer, while their neighbors across the canal must spend half a day on the canal to reach the district offices which govern them.

As the survey results indicate, about 80 per cent of the households receive the major portion of their income from cultivating rice, though many of these men and women turn briefly to other occupations during the slack season. The remaining fraction is divided between persons engaged in trade as storekeepers or vendors and those in such service occupations as highway labor or school janitor.

A little less than half of the population owns the land or a portion of the land it works, the remainder renting from neighbors and landholders living away from Bang Chan. Though land becomes scarcer every year and its subdivision into small plots finer, land problems and landlord problems are not important concerns of the area farmers. Economic factors also grant higher status within the community to land holders than to renters and the landless. So also age and religious piety bring respect. Yet social structure articulates flexibly enough to afford a young renter of good reputation and energy a decent hearing at a meeting, and indeed, he might carry his point in a group of wealthy landholders. Two or three times in past generations young men have moved from thatched houses in Bang Chan to high government positions in Bangkok through fortunate connections that enabled them to attend leading schools, as well as through their own industry. People merely invoke the Buddhist concept of accumulating merit in present and past lives through good deeds when they comment on the rise of such persons, for with sufficient merit all is possible. Thus regularity in the socio-economic order becomes a moderate level of probability admitting many exceptions.

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The Innovations

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A. Agricultural Innovations: During the past few years, certain innovations have come to Bang Chan which have increased agricultural productivity and improved the level of living. Some of these innovations are listed below.

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1. The small motor. One innovation is the small engine, gasoline motor, which is used mainly as a water-lifting device for irrigation purposes. In 1950 only five small motors were found in Bang Chan.* Twenty-one per cent of the respondents in the 1955 survey, however, report owning these motors; the majority of the respondents (68 per cent) claim to have used this labor-saving device which is sometimes jointly owned by more than one household and is frequently loaned out.**

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2. Straw mushroom growing. Three years ago the commercial growing of mushrooms in Bang Chan was unknown. By 1955, the practice of growing mushrooms had reached into many homes (44 per cent of the respondents report that they have engaged in this activity***). Even if no mushrooms have ever been grown in a given household, it is still likely that the individuals in it are aware of the practice and have observed it closely through the mushroom growing activities of their friends, relatives, and neighbors (reported in 43 per cent of the households). Only a few households (13 per cent) report that they have never grown mushrooms or have never been exposed to it in this way.

One advantage in the culture of straw mushrooms is that it permits quickly realized returns. The cycle, from sowing spores in moistened straw to harvesting the mushrooms, takes about two to three weeks. Another advantage is that there is relatively little heavy work or investment required besides the acquisition of straw and spores. A third advantage is a ready market, for the plant is sought by Chinese dealers in Bangkok who supply hotels and restaurants. Bang Chan rice farmers who engage in mushroom growing as a sideline activity sell it either to local middlemen or directly to the Chinese in Bangkok.

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[113] * Sharp, L., H. M. Hauck, K. Janlekha, and R. D. Textor, Siamese Rice Village, A Preliminary Study of Bang Chan. Thailand, Cornell Research Center, June, 1953.

[125] ** The questions: "Do you own a small engine motor or not? (If 'NO'): Have you ever made use of one in your work?"

[125] *** The question: "Have you ever grown mushrooms, or not?"

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3. Tilapia raising. In 1951, FAO suggested to the Thai Government that cultivation of tilapia be encouraged to help meet the rising need for fish in Thailand. Tilapia is a species of fish which multiplies and grows relatively fast. The strain, which came originally from Africa, is popular in Malaya and was expected to be easily marketable, thus a source of added income in Thailand. The Thai Government followed the FAO suggestion in 1952: a few Bang Chan residents dug the special pools required for the fish culture and began to raise tilapia mainly for commercial purposes. About a third (31 per cent of the households*) reported in 1955 that they have engaged in this activity. 177* 178* 228

From discussions with the people it appears that they are learning by trial and error to raise tilapia. Though fish culture is, for them, mainly a sideline activity, nevertheless, it requires the building of a special dam, care in preventing other fish from devouring young tilapia and maintaining the appropriate balance of fresh water in a given pool. The loss resulting from the fish dying or being eaten by others is relatively high. Although tilapia multiply rapidly, the cash return is not as great as that realized from mushroom growing. The cycle of raising tilapia lasts about four months. [434]

4. Artificial fertilizer. Artificial fertilizer has made its appearance in Bang Chan only recently. Informants in the community reported that only two farmers had tried artificial fertilizer in 1952. In the 1955 survey, 12 per cent of the farmers reported that they have used fertilizer or are using it. This fertilizer is mainly ammonium sulphate sold both by the government and commercial distributors. Only a few farmers (3 per cent) have ever employed it for all, or for the larger part of their fields. The remainder (9 per cent) have used it on a trial basis in only a small part of their fields.** 241 177* 178*

Fertilizer, then, has been tried out on a much smaller scale than either mushroom growing or raising tilapia. Apparently two important barriers operate against its wider acceptance. First, its high cost and the difficulty of purchase and transportation (66 per cent of farmers with ideas on the subject gave these reasons for not using fertilizers); second, popular opinion in Bang Chan declares that artificial fertilizer is not fit for low lands since it washes away and is thus waster (29 per cent of the farmers with ideas on the subject advanced this as reason for not using fertilizer). In addition, fertilizer yields delayed returns.

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* The question: "Have you ever raised tilapia, or not?" [125]

** The question: "Have you ever used fertilizer or not? .. To what extent have you used fertilizer on your fields?" [125]

743 *177 *178 B. Institutional Care of the Sick: Equally important as agricultural innovations in raising the level of living of an area such as Bang Chan are the efforts to improve the health and welfare of the population. Since the thirties there has been a clinic in the neighboring market town of Minburi and some Bang Chan farmers used clinics and hospitals in Bangkok before that time. Only about a third (36 per cent) say they have never been to a clinic or a hospital; over a third (37 per cent) have themselves gone for treatment; about one fourth (23 per cent) report having brought a patient there; over one tenth (12 per cent) say they visited relatives there; and a few (3 per cent) say they went there for various other reasons.*

ANALYSIS OF DATA ON AGRICULTURAL INNOVATIONS

121 The central question to which the present analysis directs itself is: What are some of the factors which may be said to account for the fact that certain members of the community are willing to try out these innovations and to continue using them, while others are unwilling even to make the initial attempt? Is there some general pattern to be discerned among the several innovations? Is there any discernible clustering among them; that is, are some community members more "innovation-minded" than others, in the sense that if they try out or accept one innovation they are more likely to accept another? Or are these innovations accepted independently of each other? The following analysis of the survey responses attempts to shed some light on these and related problems.

Factors in Acceptance of Agricultural Innovations

241 402 *177 *178 Use of the small motor is basic to acceptance of other agricultural innovations. Although only a minority of the persons of Bang Chan report that they own a small motor, many more used this machine through joint ownership or borrowing. Indeed, knowing whether a person owns or uses such a motor is a useful indicator of his readiness to accept other agricultural innovations. If he owns or has used a motor, then he is about five times more likely than others to try fertiliser, about two and a half times more likely to try raising tilapia, and about one and a third times more likely to try straw mushrooms.

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[125] * The question: "Have you ever been to a clinic or hospital...? In what various places...? For what various purposes did you go ...?"

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TABLE 1. THOSE WHO OWN OR USE SMALL MOTOR ARE MORE LIKELY THAN OTHERS TO TRY OTHER AGRICULTURAL INNOVATIONS (FARMERS ONLY)

	Owns motor	Does not own motor but uses it	Neither owns nor has used motor
(Total cases)*	(70)	(150)	(106)
Have you ever used fertilizer?**			
Yes	16%	16%	3%
No	82	84	97
Have you ever raised tilapia?			
Yes	53%	29%	22%
No	47	71	78
Have you ever grown mushrooms?			
Yes	48%	49%	37%
No	52	51	66

* The bases on which per cents are computed appear in parenthesis at the head of each column in this and subsequent tables. Actually the bases vary by a few cases, table to table, since there were always a few respondents who did not answer a given question or whose answers were unclassifiable.

** Asked of farmers only. The bases are:

Owns motor	65
Does not own motor but uses it	141
Neither owns nor has used motor	82
NA	5

There is some evidence, then, that if a person is willing to try out one agricultural device, such as the motor, he is more likely to try out other agricultural innovations. However, this "clustering" cannot support the hypothesis that there is something like "innovation mindedness" in general, or that acceptance of any innovation in a series is predictive of acceptance of all other innovations in the same series.

Evidence may be cited to substantiate this contention. In the first place, if such a clustering indeed prevailed, one would expect users of any of these agricultural innovations to be more disposed than others to use, as well, certain non-agricultural innovations, such as hospital or clinic facilities, for example.

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228 And no such tendency may be discerned in the present data. (See
241 Table 2.)
244 TABLE 2. USERS OF HOSPITAL AND CLINIC FACILITIES SHOW NO SIGNIFI-
743 CANT DIFFERENCES IN RATES OF ACCEPTANCE OF AGRICULTURAL
182 INNOVATIONS

Agricultural Innovations	Percentage who have ever gone to hospital or clinic for treatment	Total cases
Mushrooms		
Tried them out	36%	(143)
Never did	38	(186)
Tilapia		
Tried it out	44%	(104)
Never did	34.	(225)
Motor		
Tried it out	37%	(215)
Never did	36	(106)
Fertilizer*		
Tried it out	37%	(32)
Never did	34	(232)

* Farmers only

228 In the second place, use of the motor is much less strongly
241 linked to use of mushrooms than the use of fertilizer or tilapia.
244 It may well be that there may be some common factor strongly underlying the decision to use the motor on the one hand, fertilizer and tilapia on the other, while the decision to try mushroom-growing is relatively more "autonomous". A possible explanation for the
402 greater "autonomy" may be sought in the differential requirements
*197 for growing mushrooms compared with the requirements for adopting
*178 the other innovations.

Both tilapia and sulphates demand extra heavy work, care, an essential initial investment, and willingness to wait for a delayed return. An additional requirement for a successful and continuous pay-off from both these innovations may be an aptitude to follow rather complicated instructions. In the case of mushroom growing, however, the initial investment is relatively small, the labor may be tedious but is not heavy, no protracted or complicated care is involved, and the results of the effort are relatively quickly realizable.

There is some justification, then, for the inference that initial adoption of innovations such as fertiliser and tilapia, which require increased labor, will depend to some extent upon the availability of some labor-saving device (such as the small motor) which will enable the busy farmer to perform the necessary labor and, perhaps, leave him freer to exercise the care required for these innovations to be successful. Hence the relatively stronger relationship among these innovations. An innovation which does not make these demands, however (such as mushroom growing), is more likely to find acceptance on its own terms and may thus be less dependent for its acceptance upon availability of some sort of labor-saving device.

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Innovation and Attitude Towards It

There is further evidence in the survey substantiating the greater "autonomy" so to speak, of the decision to try mushroom culture compared with the decision to try fertiliser or tilapia.

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The present study tested the hypothesis that use of these innovations would be related to a favorable attitude toward them. Attitude toward the four innovations was determined by examining responses to the questions: "What is your opinion about fertiliser?" "...about mushroom growing?" "...about tilapia?" Responses were classified according to whether they revealed positive, mixed, or negative affective feelings to each of the innovations.

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In general, positive attitudes towards all these innovations are widespread in Bang Chan. About three-quarters of the residents express positive feelings toward mushroom growing and over half express positive attitudes to artificial fertiliser and tilapia raising. (See Table 3.) None of these innovations elicits widespread expressions of disfavor, although the respondents are more likely to express an unfavorable attitude to tilapia (29 per cent) than to fertiliser (14 per cent) or to mushrooms (7 per cent)

TABLE 3. THE MAJORITY IN BANG CHAN HOLD POSITIVE ATTITUDES TOWARDS AGRICULTURAL INTRODUCTIONS

Attitude	"What is your opinion about..." Mushrooms	Fertiliser	Tilapia
Positive	76%	59%	57%
Neutral or mixed*	6	3	2
Negative	7	14	29
No opinion	9	16	8
Not ascertainable	2	8	4
Total cases	(333)	(333)	(333)

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* The neutral or mixed attitude category comprises responses conveying partly favorable and partly unfavorable feelings such as, "some kind is good, some kind is not so good"; "in some ways I like it, in some ways I dislike it."

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228 Now let us examine the extent to which the decision to try out
241 the innovation is linked to a positive feeling towards it. The decision to try fertilizer and to raise tilapia turned out to be indeed linked with positive feelings towards these innovations. Among those favoring fertilizer, the proportion using it is six times as high as those with neutral, mixed or negative attitudes (18 versus 3 per cent); among those with positive attitudes to tilapia raisers of this fish are twice as frequent in comparison with those having neutral, mixed, or negative attitudes (43 versus 22 per cent). These relationships are shown in Table 4 below.

TABLE 4. ATTITUDES TO FERTILIZER AND TILAPIA RAISING ARE LINKED TO THEIR USE

	Attitude	
	Positive	Neutral, Mixed & Negative
Fertilizer		
Tried it out	18%	3%
Never did	82	97
Total cases*	(168)	(55)
Tilapia		
Tried it out	43%	22%
Never did	57	78
Total cases	(191)	(104)

[125] * Based on responses made by 293 farmers who expressed a codable attitude to fertilizer.

244 On the other hand, the data revealed no relationship between
*177 attitude to mushroom growing and growing them. The proportion of
*178 users and former users among those who have favorable attitudes and those who have negative attitudes remains relatively constant. Table 5 shows that among respondents with positive attitudes, 47 per cent have tried mushroom growing; while among respondents with negative attitudes, 42 per cent have done so; percentage differences are statistically insignificant.

TABLE 5. ATTITUDES TO MUSHROOM GROWING SHOW NO RELATION TO ITS ADOPTION

	Attitude	
	Positive	Neutral or Negative
	(252)	(42)
Tried mushrooms	47%	42%
Never did	53%	58%

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It appears, then, that we may be dealing with two types of innovations, one type (fertilizer and tilapia) where attitude is linked to decision to use it and another (mushrooms) where attitude seems to be unrelated to such use.* And here again may be further substantiation of the greater autonomy of the acceptance of mushroom growing. For, in the case of innovations such as artificial fertilizer and tilapia, it is known that they require investment of funds and labor, risk, delayed return, and departure from well-known ways. It could be that in the face of these disadvantages acceptance will occur only if motivation is high. Acceptors would then be selected mainly from among those who have high motivation and accompanying positive affective feeling. Those who do not have these feelings would, following this reasoning, be less likely to overcome their objections to the disadvantages of the innovation in question.

There is also the second type of innovation like mushroom growing. This innovation is much less "costly" not only of funds but effort. Hence, high motivation and accompanying positive affect might be less influential than other factors--factors quite aside from the crop itself--on acceptance of this type of innovation. Consequently, growers of mushrooms may be recruited equally from persons with favorable attitudes and less favorable attitudes towards this crop.

These findings suggest the more general hypothesis (which might be corroborated by analysis of related contextual data collected in Bang Chan, and by examining equivalent situations in other underdeveloped areas) that: the more complex the innovation, the more effort involved in employing it, the more risk involved, and the less immediate the return, the greater the likelihood that acceptors will be recruited from a selected group of highly motivated people, rather than at random among all persons "eligible" to accept it. If the innovation requires the high motivation which is needed to overcome the disadvantages of investment, work, risk, and rarity, then this attitude toward it is important. If the innovation demands only short-term investment and relatively light labor, then this motivation is of little importance in the decision to try it.

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Sociological Factors in Agricultural Innovation

The decision to use the small motor, once made, tends to accelerate the decision to try out other agricultural innovations, especially fertilizer and tilapia and, to a lesser extent, even mushrooms.

* Both mushroom growing and tilapia raising are sideline activities to the Bang Chan rice farmer and are, therefore, comparable in this respect.

*178
*177 14

228 mushrooms. The following section searches for sociological factors
241 linked to these decisions. For example, are the well-to-do farmers*
244 more apt than the less well-to-do to adopt agricultural innovations? To what extent is literacy a factor in acceptance of innovations? To what extent do differences in literacy, communications habits, cultural contacts and urban orientation account for tendencies to adopt or reject these changes?

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[125] * The following analysis has been made, in most cases, for male farmers only. The distribution of initial acceptance among the three groups of male farmers, females, and male non-farmers is given in the following table.

*179
*178 TABLE 6. USE OF AGRICULTURAL INNOVATIONS AMONG THREE GROUPS OF BANG CHAN VILLAGERS

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	Male Farmers (211)	Male Non-farmers (82)	Females (32)
Tried motor	71%	61%	48%
Didn't try	29	39	52
Tried mushroom growing	46%	35%	41%
Didn't try	54	65	59
Tried tilapia raising	35%	25%	31%
Didn't try	65	75	69
Tried fertiliser	15%	5%	**
Didn't try	85	95	

** Asked of farmers only.

It is apparent, as one would expect, that it is mainly the farmers who try these innovations. Relatively few women (with the exception of tilapia raising) and even fewer non-farmers say they have tried them. Since the absolute number of acceptors among women and non-farmers is too small to bear the separate treatment which would be essential to analyse the factors influencing the use or non-use of innovations, they have been excluded from the following presentation, which refers, thus, to male farmers only.

Economic Level

It could be, of course, that people on a higher economic level are in a better position to try agricultural innovations, since they might more easily afford not only an initial cost but also possible loss in trying out something new.

The survey data provide several indicators of economic level. Among other questions on this subject, all respondents were asked: "Here in your household how many buffaloes do you own?" About one-quarter reported owning no buffaloes at all; a little more than that proportion reported owning four or more; the median number of buffaloes reported was between two and three.

In Bang Chan buffalo are an indication of wealth, as is the amount of land planted to rice. Thus all farmers in the sample were also asked, "Last time you planted rice, how many rai* of rice did you plant?" About a third reported that they planted 19 rai or less; about one-fourth reported that they planted 40 rai or more; the median number of rai reported was 26.3.

If the reported number of buffalo owned is an adequate measure of economic level, then one would expect a high correlation between reported buffalo ownership and reported number of rai planted. If the expectation is borne out by the survey data the two indices may be used interchangeably. (Table 7 reports this relationship for the male farmers in the sample.)

TABLE 7. FARMERS[ø] WHO OWN MORE BUFFALOES ARE MORE LIKELY TO CULTIVATE LARGER LAND HOLDINGS

"...how many buffaloes do you own?"

"...how many rai of rice did you plant?	None, one or two (99)	Three or more (113)
Less than 9	31%**	11
10-19	32	7
20-29	18	37
30-39	15	23
40-or more	3	41

ø Male farmers only
** Percentages may add to 99 or 101 owing to rounding of figures.

* A Thai land measure; 1 rai = 0.4 acres.

*177 *178 241 402 434 556 *177 *178 228 231 241 244 434 402 556

Decisions to use all these innovations--with the possible exception of the use of fertilizer--seem to be more widespread among the upper economic levels of the population. (See Table 8.) One wonders whether the initial link between use of the motor and readiness to try the innovations may actually disguise a more basic relationship based simply on ability to afford the investment and the risk.

TABLE 8. FARMERS* ON HIGHER SES LEVELS ARE MORE LIKELY THAN OTHERS TO HAVE USED THE MOTOR, TO HAVE GROWN MUSHROOMS AND TO HAVE RAISED TILAPIA

	Ownership of Buffaloes	
	2 or less (99)	3 or more (112)
Used motor		
Own	6%	37%
Use	53	45
Neither	41	18
Grew mushrooms		
Yes	30%	60%
No	70	40
Raised tilapia		
Yes	26%	42%
No	74	58
Used fertilizer		
Yes	12%	17%
No	78	83

* Male farmers only

The following table presents again the initial relationships between use of motor and readiness to try out other innovations. But this time the link is examined separately for persons on the different economic levels.

Table 9 was made by first dividing the population into two groups, those from high and those from low economic levels. The resulting two groups were then further subdivided on the basis of whether they owned (or used) a motor or whether they did not. In each of the four resultant groups the percentage that raised tilapia was then calculated. Thus among those of high economic level who own or use motors, 45 per cent raised tilapia, and we infer that 55 per cent did not raise tilapia. The same procedure was repeated to ascertain the percentage that has tried fertilizer and subsequently the percentage that has tried mushroom growing.

4: Goldsen and Ralis Z-4.5 (1955) 1957
AO7 Central Thai AO7

This table shows that in tilapia raising both factors operate independently and cumulatively, i.e. people who are better off economically and who also own or use the motor are almost two and a half times as likely to raise tilapia as their economically depressed counterparts who neither own nor have access to the motor. (45 versus 17 per cent respectively.)

The link between use of the motor and attempt to try fertilizer holds regardless of economic level.

The initial link between ownership or use of the motor and growing of mushrooms, on the other hand, is shown to be a conditional one. Those on a higher economic level are more likely than others to try mushroom growing, whether or not they own or use a motor. Those on the lower economic level, with access to a motor are more likely to take up tilapia culture.

TABLE 9. RELATIONSHIP OF USE OF MOTOR AND OTHER INNOVATIONS TO ECONOMIC LEVEL

	Economic Level			
	High*		Lower**	
Owns or used motor (Proportion who have raised tilapia)				
Yes	45%	(89)	33%	(57)
No	25	(21)	17	(40)
Owns or used motor (Proportion who have tried fertilizer)				
Yes	20%	(89)	16%	(57)
No	5	(21)	*	(40)
Owns or used motor (Proportion who have tried mushroom growing)				
Yes	40%	(89)	34%	(57)
No	37	(21)	23	(40)

* Three buffaloes or more
** Two buffaloes or fewer

[231]

LITERACY

One important hypothesis to account for differential acceptance of innovations is that the decision to try them out is aided by exposure to the available sources of information. If this were indeed the case, then users of these innovations will be more apt to be able to read and write than be illiterate.

Literacy was determined by asking each respondent whether

125 he could write, could only sign his name, or could do neither.* Those who said they could write a letter are considered here to be
212 literate. All others are grouped together as illiterates or on a low level of literacy.

212 The literacy rating was tested for validity as follows: in
Long Chan literacy is known to be related to age. Ever since
872 1925** there has been a school in the community. Since that date
125 school attendance has been compulsory. Attendance has been fairly full for the last twenty years, but most older residents have never had the opportunity for formal schooling.

212 The survey data reflect this correlation between literacy and
*177 age. Among farmers under 40 years of age, only 16 per cent were
*178 rated as illiterate or barely literate by the survey criterion; while 59 per cent of those of 40 years or older are rated as illiterate. Thus one can have reasonable confidence in the survey
561 response as a rating of literacy.

TABLE 10. LITERACY OF FARMERS DECREASES WITH AGE

	Age	
	Under 40 yrs.	40 yrs. or more
Literacy		
Illiterate	16%	59%
Literate	84	41
Total cases	(79)	(131)

*177 Literacy is linked discernibly to acceptance of the motor and
*178 mushroom growing. The proportion of literate farmers who have tried the motor is twice as high as the corresponding proportion
228 among those who are illiterate. It is less strongly linked to the
241 decision to grow mushrooms, and is, at best, weakly linked to the decision to raise tilapia or to use fertilizer.
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212 * In addition, interviewers asked respondents who said they could write to demonstrate it by writing something on the ques-
402 tionnaire.

[125] ** See Ryuyen Rice Village, pp. xii.

TABLE 11. LITERATE FARMERS* ARE MORE LIKELY TO HAVE USED THE MOTOR AND TO HAVE TRIED MUSHROOM GROWING

	Illiterate (Cannot write a letter) (92)	Literate (Can write a letter) (118)
Motor		
Own	16%	35%
Use	35	60
Neither	48	14
Mushrooms		
Have tried	38%	53%
Have not	62	47
Fertilizer		
Have used	12%	17%
Have not	88	83
Tilapia		
Have tried	29%	39%
Have not	71	61

* Male farmers only

If Bang Chan were like certain areas of the United States and Europe, it might be objected that such a relationship between acceptance of innovations and literacy reflects a spurious link with economic level: that illiterates tend to come from the economically deprived strata of the population; hence an observed relationship with literacy may actually reflect the initial correlation with economic level. In Bang Chan, however, this is not the case. A Bang Chan farmer who is well-to-do is as likely to be illiterate as literate, as is illustrated by the table below.

TABLE 12. LITERACY AND ECONOMIC LEVELS ARE UNRELATED IN BANG CHAN*

	Literacy	
	Low (91)	High (119)
Economic Level		
Low	49%	56%
High	51	44

* Male farmers only

Hence the correlation between use of innovations and literacy may be taken at face value and does not reflect a spurious link with economic level.

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Communications Media

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With the increasing use of mass communications, the community member is exposed to sources of information other than the printed word. Ownership of radios has nearly tripled in about five years (in the 1955 survey radios were reported in 14 per cent of the households, whereas in 1949* only 5 per cent of the households reported owning a radio). Quite apart from ownership, radio listening is widespread; less than one-fifth of the people in Bang Chan claim they never listen to the radio (18 per cent). Motion pictures are also popular. Only one-tenth claim to having never attended a movie, while half (48 per cent) say they have seen motion pictures more than ten times.

There is, of course, a strong relationship between exposure to one of these media and exposure to the other. Table 13 below indicates that the majority (84 per cent) of respondents who listen to the radio likewise report frequent movie attendance. Similarly, the majority (67 per cent) of those who say they never listen to the radio, reported that they go to movies rarely or never.

TABLE 13. EXPOSURE TO RADIO AND MOVIES SHOWS HIGH INTERRELATION

	Radio listening		
Movie Attendance	High Exposure (regular or occasional listeners) (111)	Low Exposure (listen seldom) (143)	No Exposure (60)
High exposure (10 times or more)	64%	33%	13%
Medium exposure (4 to 9 times)	19	17	21
Low Exposure (0 to 3 times)	16	51	67

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Exposure to the communications media is strongly linked to acceptance of a basic innovation such as the motor. It is not directly linked to acceptance of the other agricultural innovations (fertilizer, tilapia, mushrooms). Respondents who report frequent exposure to radio listening and motion picture attendance are significantly more likely than others to say they own or have used the motor. (Among daily radio listeners 88 per cent report use of the motor; and this proportion declines steadily until among those who never listen, only 44 per cent use the motor; for movies the corresponding proportion of users ranges from 76 to 36 per cent.)

* Siamese Rice Villages, op. cit.

TABLE 14. HIGH EXPOSURE TO COMMUNICATIONS MEDIA IS LINKED TO ACCEPTANCE OF THE MOTOR

	Exposure to Radio			
	High			Low
	Listens Daily (45)	Listens Occasionally (64)	Listens Seldom (148)	Never Listens (80)
Small Engine Motor				
Used it	82%	78%	64%	44%
Didn't use it	12	22	36	54

	Exposure to Movies			
	High			Low
	Ten times or more (161)	4-9 times (60)	1-3 times (75)	None (33)
Used it	76%	69%	59%	36%
Didn't use it	24	31	31	64

Of course it is important to check whether these relationships hold true when people on different economic levels are examined separately; for literates as well as for illiterates. We infer that the basic link between use of the motor and exposure to the media of communication holds for literate as well as illiterates; for poorer as well as for richer farmers. More specifically, the relationship between exposure to the communications media and decision to use the motor is even more marked for less well-to-do and for the illiterate farmers, in contrast to the better-off farmers and those who can read and write.

TABLE 15. EXPOSURE TO MOTION PICTURES IS LINKED TO ACCEPTANCE OF MOTOR ESPECIALLY FOR THE ILLITERATES AND FOR THE ECONOMICALLY LESS WELL-OFF*

	Exposure to Motion Pictures			
	High		Low	
	(Percentage Using Motor)			
Economic Level				
Low	76%	(47)	44%	(32)
High	81	(44)	75	(45)
Literacy				
Illiterate	63%	(36)	44%	(33)
Literate	88	(77)	81	(41)

* Male Farmers Only

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207 Exposure to the media of mass communication seems to act, in
a sense, as a substitute for literacy. It may be that through
212 these means either an illiterate farmer can obtain information
about the more complex agricultural tools and methods or motivation
546 to try improvements, or both, even though he may not know how to
read and write. One may infer that he tends to act on the infor-
mation thus obtained, since he is more likely than his unexposed
opposite number to try out these innovations.

*178
*177 Acceptance of Urban Patterns

369 The printed word and the mass media are, of course, not solely
channels for the communication of knowledge. They are, at the
same time a means whereby the farmers may establish some sort of
contact with the more sophisticated world outside the community
even with highly urban Bangkok.

[291] The survey indicates in a general way the extent to which
[416] the people of Bang Chan have accepted urban patterns. Their grow-
[207] ing acceptance of urban modes is readily apparent even to a casual
visitor: many own shoes, flashlights, wrist watches, radios,
bicycles, fountain pens, modern furniture.* Other urban behavior
is likewise beginning to be noticeable.

[493]
[413] One very simple indication of the degree to which urban in-
[358] fluences have penetrated is the change in manners of taking
food. The farmers traditionally eat with their hands rather than
using a fork or spoon. In Bangkok, however, eating utensils are
customarily served with the meals in restaurants and are widely
adopted as well by the city population. Some Bang Chan inhabi-
*177 tants have picked up this simple urban custom and have substituted
*178 it for eating mainly with their hands. In Bang Chan of 1955, for
example, a sizeable minority (26 per cent) report that they use a
264 spoon, fork or both for the evening meal.
369
[207] That such a simple question can roughly measure exposure
[546] to urban influences, is indicated in the following table, which
shows that respondents who report customarily eating with "urban
utensils" are more likely to be exposed frequently to radio and
motion pictures and are more likely to have visited in Bangkok.

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[412] * Survey respondents report that their households possess a
flashlight (81 per cent); scissors (66 per cent); kerosene lamp
(27 per cent); radio (14 per cent). About 41 per cent say they
own at least one pair of shoes.

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TABLE 16. INHABITANTS WHO HAVE ADOPTED URBAN EATING PATTERNS ARE MORE LIKELY THAN OTHERS TO BE EXPOSED TO MASS COMMUNICATIONS AND URBAN CONTACTS

	Eating Patterns	
	With hands (242)	With fork and/or spoon (84)
Listens to radio		
Regularly (daily)	10%	23%
Occasionally	17	28
Seldom	31	35
Never	32	10
Has seen a movie		
Ten times or more	40%	72%
4 - 9 times	19	17
1 - 3 times	28	10
Never	13	1
This past year, how many times did you go to Bangkok?		
None	26%	7%
Once	18	15
2 - 4 times	29	23
5 or more times	28	55

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When acceptance of urban influences is measured even on the basis of this index, the evidence is clear that it is linked with acceptance of the agricultural innovations. Those responsive to urban influence are twice as likely as others to use fertiliser (21 per cent versus 9 per cent), one and a half times as likely to grow mushrooms (37 per cent versus 39 per cent), and one and a quarter times as likely to use a motor than the others (82 per cent versus 61 per cent). There is no noticeable relationship, however, between tilapia raising and responsiveness to urban influences. The respective proportions are shown in Table 17.

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These relationships between acceptance of urban patterns and decision to use certain innovations remain constant for those on high as well as low economic levels and also for the literate as well as illiterate farmers.

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TABLE 17. VILLAGERS RESPONSIVE TO URBAN PATTERNS ARE MORE LIKELY THAN OTHERS TO USE AGRICULTURAL INNOVATIONS

Agricultural Innovations	Eat with fork and/or spoon	Eat with hands
Artificial fertiliser		
Tried it	21%	9%
Never did	79	91
Total cases*	(69)	(218)
Mushrooms		
Tried growing	57%	39%
Never did	43	61
Total cases	(84)	(242)
Small engine motor		
Own one or have used it	82%	61%
Never did	18	39
Total cases	(84)	(242)

* For farmers only; excludes all non-farmers

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TABLE 18. ACCEPTANCE OF URBAN PATTERNS IS LINKED TO ACCEPTANCE OF MOTOR AND MUSHROOM GROWING, IRRESPECTIVE OF ECONOMIC AND LITERACY LEVELS

	Economic Level				Literacy Level			
	Low		High		Illiterate		Literate	
Acceptance of urban patterns	(Proportion who used motor)							
Eat with hands	53%	(77)	76%	(73)	47%	(73)	83%	(76)
Fork or spoon	75	(20)	89	(34)	69%	(16)	90	(38)
	(Proportion who tried mushroom growing)							
Eat with hands	28%	(77)	58%	(73)	38%	(73)	47%	(76)
Fork or spoon	45	(20)	65	(34)	44	(16)	66	(40)
	(Proportion who used fertiliser)							
Eat with hands	11%	(77)	13%	(73)	10%	(73)	14%	(76)
Fork or spoon	19	(20)	26	(34)	3	(16)	23	(40)

Contacts Outside the Community

Radio and movies provide indirect contact between the community and the outside world and seem to encourage the acceptance of urban behavior patterns. (See Table 18.) In addition, however, there is direct contact between the community and the capital city. The inhabitants commute to Bangkok to sell their products or to visit. Some go to the city to live for a time, to attend the city's schools, to work as laborers or to serve in the military or police force. For example, about a quarter of the sample (26 per cent) reported that during the year preceding the survey they had been to Bangkok ten or more times. About a third of the sample (35 per cent) have lived in Bangkok, mostly for the purpose of working there. On the other hand, almost half the sample (45 per cent) have never been to the Don Muang Airport; and over two-thirds (69 per cent) have never been to the Annual Agricultural Fair.

One would expect that such direct exposure to the urban life and values of the capital city, for example, might be linked with greater readiness to try out improved methods of agriculture either because exposure to urban life may mean exposure to more information, or, less directly, may mean exposure to the urban values of economic self-advancement and experimentation. And there is, indeed, a relationship between exposure to the capital city and use of the motor. The two factors are not linked for all the residents--the relationship is a conditional one. That is, it is mainly among illiterate farmers where urban contact is associated with readier acceptance of the motor.

TABLE 19. ILLITERATE FARMERS* WHO HAVE GREATER CONTACT WITH THE CITY ARE MORE LIKELY THAN OTHERS TO USE THE MOTOR

"This past year, how many times did you go to Bangkok...?"

Literacy	Never or once	Twice or more
	(Proportion who own or use the motor)	
Illiterate	44% (40)	58% (51)
Literate	83 (36)	88 (83)

* Male farmers only

In the same way, there is a similar conditional link between use of the motor and wider contacts beyond the horizons of Bang Chan. Visits to the airport and to the agricultural fair, for example, (both centers of contact with urban culture) are associated with use of the motor among illiterate farmers. If the farmer can read and write, on the other hand, he is just

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as apt to adopt the motor irrespective of whether he has been in contact with urban culture.

TABLE 20. ILLITERATE FARMERS* WITH WIDER CULTURE CONTACTS ARE MORE LIKELY THAN OTHERS TO USE THE MOTOR

	Illiterate (Proportion using the motor)		Literate (Proportion using the motor)	
Trips to the airport				
None	38%	(40)	86%	(35)
One or more	63	(49)	86	(83)
Visits to the agricultural fair				
None	50%	(67)	85%	(76)
One or more	57	(24)	88	(43)

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[241]
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*Male farmers only

However, no such relationship was discerned between these culture contacts and trying out either fertilizer, tilapia, or mushrooms.

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Here again, is evidence to support the hypothesis that contacts with urban culture may act as a substitute for literacy in making the farmer more sophisticated about improving his standard of living and level of production. But the data show that such exposure need not result from direct physical contact with urban centers; it can, instead, be a result of indirect contact. Direct physical contact with urban culture, it turns out is effective in increasing the incidence of acceptance of the more complex innovations only for the illiterate farmers of Bang Chan.

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Friendships

The same reasoning which would lead one to expect a higher incidence of acceptance of innovations among those directly exposed to urban contacts would lead to the companion hypothesis: that inhabitants who have a greater degree of internal contacts with their friends and neighbors might tend to try out innovations to a greater extent than those who remain relatively aloof from such social contacts.

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The data show that such contacts have a limited connection with acceptance of innovations. The incidence of motor use and tilapia raising is higher, it is true, among persons who report a wider sphere of social circulation; but there is little relation between social contacts and willingness to try out fertilizer or mushrooms.

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TABLE 21. INCIDENCE OF MOTOR USE IS HIGHER AMONG VILLAGERS WHO REPORT WIDER SOCIAL CONTACTS

	Social Contacts ("...Do you have more close friends than most people around here, or about the same as most people around here, or fewer close friends than most people around here:")	
	"More" or "the same" (143)	"Fewer" (55)
Motor		
Has used it	77%	55%
Never did	23	45
Tilapia		
Has tried it	39%	21%
Never did	61	79
Fertiliser		
Has used it	16%	11%
Never did	84	89
Mushrooms		
Has tried them	49%	40%
Never did	51	60

Once again, however, when this link between breadth of social contacts and use of the innovations is examined separately for the literate, compared with the illiterate farmers, we find further substantiation of the previous finding that under certain circumstances contact may act as a substitute for literacy in acceptance of complex innovations. For, although the link between social contacts and use of tilapia remains constant for literate as well as illiterate farmers, it is mainly for those who are illiterate that exposure to wider local social contacts is associated with greater incidence of motor use.

[212]

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TABLE 22. AMONG ILLITERATE FARMERS USE OF MOTOR IS LINKED TO WIDER SOCIAL CONTACTS

	Exposure to Influence of Others: Have more friends or about the same		Have fewer friends	
	(Proportion who tried small motor)			
Literacy				
Illiterate	64%	(56)	26%	(27)
Literate	87	(86)	86	(78)
	(Proportion who tried tilapia)			
Illiterate	34%	(56)	15%	(28)
Literate	43%	(86)	26	(27)

[369] This finding corroborates and expands the previous discussion of the culture contact and acceptance of innovations. Exposure to influence of others from outside the community (through contact with the city, with the airport, with the agricultural fair, for example), as well as exposure to the influence of others from within (through friends and associates) clearly relates to the decision to use an innovation such as the motor. Its effectiveness is not felt equally by the whole population, mainly instead, by those who are illiterate.

The significance of these internal and external contacts to illiterates may be that through such contacts they are likely to gain needed information and motivation which, if one can read and write, is available through other sources. If one cannot read and write, however, it is the outside world which provides this kind of needed information.

Capital Investment and Debt

426 Bang Chan s economy is largely a money economy and many farmers avail themselves of credit facilities through professional money lenders. Most loans are sought for the purpose of replacing capital equipment and purchasing land and buffalo.*

The present survey secures a rough measure of the extent of such borrowing in Bang Chan. The majority of farmers (39 per cent)

[113] * See Janlekha, Kamol O. A Preliminary Study of the Economic Conditions of Siamese Rice Farmers in Bang Chan, Thailand. M.S. Thesis Cornell University, 1951, p. 73.

admit in response to a direct question* that they have a debt. Confidence in the validity of these responses as an index of indebtedness is increased since the expected correlation between indebtedness and ownership of buffalo is reflected in the survey data.

TABLE 23. INCIDENCE OF REPORTED DEBT IS HIGHER AMONG VILLAGERS WHO REPORT OWNERSHIP OF MORE BUFFALOES

	Reported Ownership of Buffaloes		
	None (81)	One to three (155)	Four or more (97)
"...Do you now have a debt?			
Yes	49%	56%	69%
No	51	44	31

When the use of agricultural innovations is examined for those farmers who say they have a debt, compared with those who deny it, it becomes apparent that there is a relationship only between indebtedness and use of the motor but not with any of the other mentioned innovations. Seventy-nine per cent of the male farmers who said they have a debt own or use the motor; among those who claim they have no debt the proportion owning or using the motor is significantly less (60 per cent).

TABLE 24. INCIDENCE OF MOTOR USE IS HIGHER AMONG FARMERS WHO REPORT INDEBTEDNESS

	"...Do you now have a debt: "Yes" (125)	"No" (85)
Motor		
Has used it	79%	60%
Never did	21	40
Tilapia		
Has tried it	37%	33%
Never did	63	67
Fertiliser		
Has used it	14%	16%
Never did	86	84
Mushrooms		
Has tried them	45%	48%
Never did	55	52

**Male farmers only

* The question: "...I'd like to ask about a problem common in rural places all over the world. Do you now have a debt or not?" Janlekha's M.S. thesis, ibid., reports a similar distribution of indebtedness for his sample of 96 farmers.

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402 One is tempted to speculate about the significance of this relationship. One possibility deserves further investigation if the data were only available. If one important reason for incurring debts is to secure or to replace capital equipment, then those farmers more willing to make a capital investment, even though they incur a debt, are more likely to use the motor. Conversely, farmers unwilling or unable to contract debts for a basic improvement in their capital equipment might be the ones less likely to adopt an innovation such as the motor.

Other Factors

121 A number of other factors which conceivably might have been expected to differentiate those who tried out these innovations from those who never made an attempt to use them were investigated and proved to have no differentiating power. Factors such as age and family size, for example, were examined to see whether differential acceptance existed among younger compared with older age groups, or small as compared with large families. No such differences appeared. In the same way, the survey's rough measures of community integration and identification, certain religious beliefs and superstitions, certain personality traits, of knowledge of political figures, and willingness to perform industrial work likewise revealed no differential rates of acceptance when groups were compared.

*178 USE OF MODERN HEALTH FACILITIES

743 Improvements in agricultural production must certainly not be viewed as the only efforts worthy of attention to raise the level
75 of living in Bang Chan. Equally important are efforts to train the population to use modern health practices and facilities.

Hospitals have been available since the twenties in Bangkok and a clinic in Minburi since the thirties. Despite these facilities, much curing continues in the traditional way through priests or certain farmers of the locality who have learned from other practitioners to compound medicines, set bones, deliver babies and expel demons.

743 In the present survey the majority of respondents reported
[125] that they have sometimes in their lives used hospital or clinic facilities. To the question, "Have you ever been to a clinic or hospital?" 63 per cent answered affirmatively. Less than half of those who replied indicated having gone for their own treatment or hospitalization, the remainder for other reasons. The distribution of responses is given below.

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[125]

"Have you ever been to a clinic or a hospital? (If yes) For what various reasons?

No, never went	37%
Yes	63
For treatment or hospitalization	37*
To bring a patient there	23*
To visit relative(s) or friend(s)	14*
Other reasons	3*

* These responses should not be cumulated since some respondents reported more than one reason for going.

If, indeed, the responses to this question are to be considered a valid index, one would expect respondents who reported having used these facilities also to report a higher incidence of visits to Bangkok, where the available hospitals are located. This expectation is confirmed by the responses to the two relevant questions.

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TABLE 25. INCIDENCE OF TRIPS TO BANGKOK IS HIGHER AMONG RESPONDENTS WHO REPORT VISITS TO CLINIC OR HOSPITAL

"In the past year, how many times did you go to Bangkok...?"	Have you ever been to a clinic or a hospital?"		
	Yes, for treatment (123)	Yes, for other reasons (91)	No (118)
Ten or more times	32%	31%	17%
Two to nine times	40	37	29
Once	13	12	25
Never	15	20	30

The present study now asks what factors are associated with use of modern health facilities.

Demographic Characteristics of Hospital Users

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It is important to answer one question in advance of more detailed analysis. Does an affirmative reply to the question, "Have you ever been to a hospital or clinic" measure need for medical care rather than acceptance of modern health practices.

No direct measure is available of the actual state of health of the survey respondents. But, assuming that older people need medical care more than younger people, then we have an indirect index of whether or not hospital use is higher among people of advanced age. The data show no such relationship.

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TABLE 26. INCIDENCE OF HOSPITAL AND CLINIC VISITS IS SIMILAR FOR ALL AGE GROUPS

Have you ever been to a clinic or a hospital?	20-29 (41)	30-39 (80)	40-49 (85)	50-59 (60)	60 or over (57)
No, never	31%	31%	36%	37%	41%
Yes, for treatment	39	44	39	31	31
Yes, for other reasons	29	25	25	32	28

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If the responses reflect primarily the need for medical care, women who bear children have a greater need for medical care than men, and one would therefore expect hospital use to be higher among women than men. But again, thus hunch is not clearly borne out by the results.

TABLE 27. INCIDENCE OF HOSPITAL AND CLINIC USE IS SIMILAR FOR MEN AND WOMEN

Have you ever been to a clinic or a hospital?	Women (90)	Men (243)
No, never	41%	33%
Yes, for treatment	31	39
Yes, for other reasons	28	26

There is, then, reasonable justification for inferring that reported use of clinics or hospitals reflects predisposition to use modern health facilities and not simply a need for medical care.

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Economic Level

Although higher economic level was linked to the principal agricultural innovations, it is not related to use of hospital or clinic facilities.

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Literacy

On the other hand, just as literate persons were more disposed to use the major innovations (p. 19), in the same way those who can read and write report a greater incidence of hospital or clinic use.

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TABLE 28. INCIDENCE OF HOSPITAL AND CLINIC USE IS HIGHER AMONG LITERATE VILLAGERS

Have you ever been to a clinic or a hospital?	Literate (163)	Illiterate (169)
No, never	27%	44%
Yes, for treatment	42	33
Yes, for other reasons	31	23

Apparently here, too, exposure to sources of information predisposes the inhabitants to greater acceptance of modern health practices.

Exposure to Mass Media

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Again, as with agricultural innovations, exposure to the media of mass communication is linked to acceptance of modern health practices.

TABLE 29. INCIDENCE OF HOSPITAL AND CLINIC USE IS HIGHER AMONG VILLAGERS EXPOSED TO MASS MEDIA

	Movie Attendance		
Have you ever been to a clinic or hospital?	Ten or more times (161)	4-9 times (60)	Three times or less (108)
No, never	25%	32%	55%
Yes, for treatment	48	33	22
Yes, for other reasons	27	35	23

	Radio Listening		
	Daily or occasionally (111)	Seldom (148)	Never (60)
No, never	20%	39%	58%
Yes, for treatment	52	33	18
Yes, for other reasons	28	28	23

Mass Media as a Substitute for Literacy

It will be recalled (see p. 21) that the mass media seem to act as a substitute for literacy. The same relationship reappears here. The table following indicates that literacy links with use of hospitals or clinics only when exposure to mass media is rare.

[212]

*178 With more frequent exposure to these media, the link between literacy and use of hospitals or clinics decreases.

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TABLE 30. EXPOSURE TO MASS MEDIA IS LINKED TO HOSPITAL USE, ESPECIALLY AMONG ILLITERATES

	Literate		Illiterate	
	(Proportion reporting use of hospital or clinic)			
Movie Attendance				
High (ten or more times)	78%	(103)	71%	(38)
Low (nine times or less)	64	(56)	48	(111)
Radio Listening				
High (listen "frequently")	81%	(48)	79%	(42)
Low (listen "seldom or never")	66	(86)	48	(122)

*178 Acceptance of Urban Practices

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Table 17 showed that acceptance of certain urban practices was linked to acceptance of the major agricultural innovations. Acceptance of urban practices is also associated with use of clinics and hospitals. Use of modern medicine is significantly higher among those who no longer eat with their hands than among those who do.

TABLE 31. ACCEPTANCE OF URBAN PRACTICES IS LINKED TO USE OF CLINIC AND HOSPITAL FACILITIES

	Customarily Eat With	
	Fork or spoon (84)	Hands (342)
Have you ever been to a clinic or a hospital?		
No, never	28%	39%
Yes, for treatment	48	33
Yes, for other reasons	24	28

*178 Contact Outside Bang Chan

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It has already been reported (see Table 23) that hospital and clinic use is higher for those who, during the past year, have paid more frequent visits to Bangkok. This correlation may seem, at first, spurious, since the main centers of medical care are situated in Bangkok. But the questions asked about contact with Bangkok for the one-year period preceding the survey, and visits to the hospital or clinic over an unspecified time period show

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that the relation of these two indices appears valid. In addition there is further substantiation of the hypothesis that contacts with the world outside Bang Chan are linked with use of modern medical practices: The incidence of such use is significantly higher among those who have visited the airport than among those who have never done so.

TABLE 32. INCIDENCE OF HOSPITAL OR CLINIC USE IS HIGHER AMONG THOSE WHO HAVE VISITED THE AIRPORT

	Trips to the Airport		
Have you ever been to a clinic or a hospital?	None (148)	One (36)	Two or more (134)
No, never	41%	36%	28%
Yes, for treatment	35	40	39
Yes, for other reasons	24	24	33

Moreover, additional support for this contention is found in the higher incidence among hospital and clinic users, of knowledge of the world outside the community.

It is reasonable to assume that greater contact with the capital city is likely to increase the farmers' awareness of its major public figures. And, indeed, the incidence of hospital and clinic use is highest among those who are able to name correctly certain of Thailand's major public figures, as the Prime Minister and the National Police Chief.

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TABLE 33. INCIDENCE OF HOSPITAL OR CLINIC USE IS MORE WIDESPREAD AMONG VILLAGERS WHO ARE AWARE OF THAILAND'S PUBLIC FIGURES

	Have you ever been to a hospital or a clinic?			
	No, Never	Yes, for other reasons	Yes, for treatment	Total 100%
...Who is now the Prime Minister of Thailand ...Would you please tell me his name?				
Names Prime Minister	27%	30%	43%	(192)
Does not know	48	23	29	(140)
...Who is now the Chief of Police of Thailand...Would you please tell me his name:				
Names Chief of Police	23%	31%	46%	(144)
Does not know	48	25	28	(164)

* 178
743 Use of Health Facilities and Other Factors Associated With
241 Agricultural Innovations
572 Although use of the basic agricultural innovations was shown
426 to be linked to breadth of contacts within the community, on the one hand, and to indebtedness, on the other hand, the association between these factors and use of modern health facilities, although showing the same tendency, is not statistically significant. For the sake of completeness, the figures are reported below:

TABLE 34. NO RELATIONSHIP BETWEEN INDEBTEDNESS OR INTERNAL SOCIAL CONTACTS AND USE OF HOSPITALS AND CLINICS

	"Have you ever been to a clinic or a hospital?"			
	No, never	Yes, for treatment	Yes, for other reasons	Total (N)
Social Contacts				
"More friends"	31%	39%	34%	(61)
"The same"	40	35	25	(154)
"Fewer friends"	33	41	27	(94)
Do you now have a debt?				
No	40%	33%	28%	(140)
Yes	33	41	26	(192)

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* 178
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SUMMARY

1. In the community of Bang Chan in Central Thailand, various factors are studied statistically in order better to determine the conditions of acceptance of selected agricultural innovations and conditions for using the facilities of modern medicine in clinics and hospitals. Four agricultural innovations were selected, viz. gasoline motor, raising of fish (tilapia), use of fertilizer, and mushroom culture.

2. The present study was concerned with the initial adoption or trial of innovations, rather than the continuing use of these innovations or the merging of the new with the old features of the culture.

3. While adoption of the gasoline motor was associated with all other agricultural innovations, no generalized acceptance of the new was found because: a) adoption of the gasoline motor bore little or no relation to use of non-agricultural innovations such as hospital and clinic facilities; and b) adoption of gasoline motors was only weakly associated with raising of mushrooms.

4. A cluster of traits including high motivation and sizable capital outlay was associated with the use of the gasoline motor.

The motor users formed a group with higher economic level, greater literacy, higher acceptance of urban ways of life, more frequent exposure to mass media, broader social contacts within the community, and greater use of credit facilities. Illiterate farmers might also be motor users, if their contacts with urban centers were extensive.

5. Acceptance of mushroom culture was a special case of agricultural innovation: a) so distinct from all other attitudes toward innovation, mushroom growers were not marked by their high positive attitudes toward mushroom culture; b) the investment in mushroom raising per se was less than the investment and risk required by other types of agricultural innovation.

6. The mushroom growers as a group distinct from non-mushroom growers were more literate and receptive of urban ways. Tilapia raisers were of a higher economic level and had greater community contacts than non-tilapia raisers.

7. An hypothesis was offered: that innovations differ in complexity and investment of effort required. The more complex presuppose greater investment, work, risk and postponement of returns; hence this complex kind requires greater motivation than the simpler ones such as mushroom raising.

8. Use of hospital and clinic facilities was more frequent among the literate, those exposed to mass media, those accepting of urban ways and those having greater contacts with the city. Unlike acceptors of agricultural innovations, users of modern medical facilities were not of a higher economic level than non-users and could not be clearly distinguished on the basis of breadth of contact within the community or use of credit facilities.

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APPENDIX A

March 1956

HOW THE BANG CHAN SURVEY WAS CONDUCTED

How the Study Came to be Made

121 The survey conducted in May 1955 was part of a program* for testing diverse techniques of data-gathering in cultures substantially different from U.S. and Western European cultures, where the survey method of gathering data had been developed and tested.

114 The survey questionnaire was developed and the field work carried out with the help of area specialists of the Cornell Research Center in Bangkok. Mr. Robert B. Textor and Mr. Loobonga Smithsaya of the Cornell Thai staff assisted the field director and recruited the English-speaking Thai university students who interviewed for the survey.

The Questionnaire

12 After a period of training interviewers about the questionnaire and techniques of interviewing, the questionnaire was pretested in a rural community near Bang Chan. Then the staff, consisting of the field director, his deputy, and five Thai interviewers, among them one woman, moved to Bang Chan to carry out the survey.

124 Thai and English-language versions of the schedule were drawn up, but of the 335 interviews conducted in the survey,
125 the overwhelming majority was conducted in the Thai language rather than through an interpreter.

The Interviewers

124 The interviewers were a mixed group: one Thai-speaking American anthropologist; one trained Thai anthropological field worker; two Thai Christians (one a theology, the other a medical student); one Thai Buddhist medical student, one Thai Buddhist female social worker; and an American sociologist who used the Thai interviewers as interpreters.

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[122] * The Cornell Cross-Cultural Methodology Project for the Development and Testing of Improved Methods to Study Underdeveloped Areas is supported by a grant from the Rockefeller Foundation and is a project in the Department of Sociology and Anthropology.

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On the average, an interview took about 40 minutes. Interviews ranged from about 20 minutes to one and a half hours. During the first days of interviewing the duration of an interview was on the average a little longer, and decreased as the interviewers became familiar with the instrument. For the first four days of interviewing, the daily output of interviews amounted to an average of 23; from the fifth day on the daily average output increased to 32 interviews.

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The survey focussed mainly upon factors associated with the acceptance or rejection of certain changes in the village. The questionnaire was designed to permit: (1) a check on whether a question was meaningful to the respondents in the sense of its analytic significance in the study design; (2) testing the relative analytic sensitiveness of different types of question and answer categories; (3) collecting data whose manifest content was identical to content which had been investigated in other field stations; (4) collecting data, which, while differing from the manifest content covered in other field stations, nevertheless, had the same conceptual significance in this particular culture analysis; and (5) collecting specific information of interest to the area specialists assisting the Methodology Study.

Sampling

Problems of sampling were minimal. The entire area previously studied by Cornell anthropologists, consisting of seven hamlets, constituted the universe from which respondents were to be selected. The sampling unit was a household, defined as a single person or a group of persons constituting an economic unit and customarily using the same kitchen. Interviewers were instructed to select the head of the household as respondent. The head of the household was defined as that resident whom other members considered to be the head. If the head of the household was unavailable, interviewers were instructed to substitute "an articulate member of the household," defined as a person in a given household eligible to substitute as head. The majority of the respondents (85 per cent) were the actual heads of their households; substitutions were made only in the remaining 15 per cent of the cases. Interviews were gathered from all but one of the 336 households in the Bang Chan area studied.

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The sample obtained is composed of 243 males and 90 females, of 298 Buddhists and 35 Moslems. As far as ascertainable, the respondents reported their place of birth as follows:

140 were born in Khoshnjaow Commune
116 were born in Bang Chan Commune
11 were born in Minburi Commune
30 were born outside of the three above communes

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621 The age breakdown of the sample is as follows:

41 cases of 20 to 29 years of age
75 cases of 30 to 39 years of age
85 cases of 40 to 49 years of age
68 cases of 50 to 59 years of age
41 cases of 60 to 69 years of age
16 cases of 70 years or more

The occupational status breakdown is as follows:

269 farm operators
24 farm laborers
18 in trade or commerce
10 in service occupations
12 other (2 retired, 2 artisans, 1 traditional doctor, 1 janitor, 1 air force man, 1 policeman, 1 children's caretaker 1 gardener, 1 laborer in irrigation department, and 1 occupation unspecified)

123 Respondent Reaction to the Survey

The respondents were in general cooperative and congenial as is substantiated by the following interviewers' ratings:

(1) 93 per cent of the respondents were reported as cordial at first contact;

(2) 96 per cent of the respondents were reported friendly, cooperative, and responsive for all or most of the interview;

(3) 90 per cent of the respondents were reported as speaking freely for all or most of the interview,

(4) 91 per cent were reported as answering to the point of most or all questions, as giving reasonable, applicable answers;

(5) Only 3 per cent of the respondents were reported as giving many guarded, insincere or evasive replies, whereas 15 per cent were reported as giving some guarded, insincere or evasive replies; and 80 per cent of the respondents were reported as giving no guarded, insincere or evasive replies.

114 The interviewing period fell in a relatively quiet season between harvesting and planting of paddy. At that time farmers were readying implements and beginning to prepare for harrowing and sowing the seed-beds. The period coincided with a period of university vacation so as to recruit English-speaking interviewers. The morale of the staff was high at all times.

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APPENDIX B

Cornell Methodology Project
Thailand, May 1958

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BAN CHAN STRUCTURED QUESTIONNAIRE (Frequency Distributions)

A. Ser. No. B. Hamlet and N C. Date of Interview D. Name of Respondent [162]

F. Sex
9. Male 213
X. Female 90

G. Religious Affiliation
0. Buddhist 298
Y. Muslim 35

H. Main Occupation [46]
8. Farm operator 249
9. Farm laborer 24
X. Trade and commerce 13
Y. Service 10
0. Other, Specify_____ 13

I. R is HH or not HH
1. HH 277
2. Not HH 36

J. If not HH, relationship to HH
3. Husband —
4. Wife 13
5. Son 10
6. Daughter 2
7. Father —
8. Mother —
9. Mother-in-law —
X. Other relative 3

1.a. Were you born in Ban Chan Commune, Khawa Tao Commune, Mimburi Commune, or outside?

b. If outside, in what province were you born? [166]

1. BC Commune 116
2. KT Commune 141
3. Mimburi Commune 11
4. Commune unascertainable 2
5. Outside BC, KT, Mimburi 30
7. Unascertainable 33

2.a. How old are you? [162]
b. In what zodiac year were you born?
1. 20 to 29 41
2. 30 to 39 [illegible]
3. 40 to 49 [illegible]
4. 50 to 59 [illegible]
5. 60 to 69 [illegible]
6. 70 and over 17

48

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[872]

3.a. Is there anyone from your house who is now attending nattayum school?
1. Yes 84
2. No 309

b. Do you have any children who have not yet entered or not yet finished prathom school?
1. Yes 201
2. No 191
→ Unascertainable 4

c. IF YES: Do you plan to send any of these children to nattayum school or not, or is it uncertain?
1. Plans to send 66
2. Does not plan to send 83
7. Unascertainable 52

[863] 4. What kind of occupation would please you the most—farming or some other occupation? If some other occupation, what other occupation would please you the most?
1. Farmer prefers farming 266
2. Farmer prefers other occupation 25
3. N. from other occupation prefers his occupation 25
4. N. from other occupation prefers farming 8
5. N. from other occupation prefers another occupation 5
6. Unascertainable 4

5. How is Ban-na NC-KT in your opinion? Is it a very good place to live, a fairly good place to live, or not such a good place to live?
1. Very good 71
2. Fairly good 254
3. Not so good 4
0. Unascertainable 4

[276] 6.a. Do you smoke cigarettes or not?
1. Yes 204
2. No 118
— No Answer 7

b. If yes: Would you say that you smoke more cigarettes than most people in NC-KT, less than most people in NC-KT, or about the same as most people in NC-KT?
1. More 11
2. Less 68
3. About the same 124
0. Unascertainable 8

7. I understand that, since the last war, there have been, around here, some introductions of new things in the field of rice farming, other farming, gardening, and fishing in order to raise production. What are these various new things? [177*] [178*] [125]

1.	Fertiliser	2
2.	Small engine	4
3.	New rice seeds	3
4.	Tilapia	96
5.	Other fish, specified	13
6.	Fish, unspecified	80
7.	Mushrooms	45
8.	Poultry	179
9.	Pigs	21
X.	Other, specify	68
0.	Unascertainable	45

[241] [402] [243] [228] [244] [235] [231]

8. Here, some farmers get a lot more rice from one rai of land than others get. Generally speaking, what are the various reasons why this is so? [243] [433]

1.	Fertiliser	59
2.	Skill of the farmer	63
3.	Quality of the soil	65
4.	Irrigation facilities	125
5.	Type of seed	17
6.	Other reason, specify	53

9.a. When was it more profitable for you to grow rice, this year just finished, or two or three years ago? [243] [434]

1.	This past year	131
2.	No difference	57
3.	2 or 3 years ago	62
4.	Unascertainable	25
—	Does not apply	58

b. If 2-3 years ago: If this is so, then it has become less profitable to grow rice. Such being the case, have you done anything to improve the income of your family?

7.	Yes	36
8.	No	25
9.	Unascertainable	1

c. If yes: what various things have you done?

5.	Nothing	4
6.	Mushrooms	6
7.	Poultry	8
8.	Fish (Incl. Tilapia)	5
9.	Fertiliser	
X.	Other, specify	25
Y.	Unascertainable	2

10.a. Do you own a small engine motor, or not? [402]

1.	Yes	70
2.	No	259
—	No Answer	4

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[402] b. If no: have you ever made use of one in your work, or not?
3. Yes 145
4. No 106
5. Unascertainable 8

11. What is your opinion about fertilizer?
(See code at end)

[241] 12.a. IF R IS A FARMER: Have you ever used fertilizer or not?
6. Does not apply 17
7. Yes 32
8. No 232
— No Answer 12

b. IF HAS NOT USED FERTILIZER: For what various reasons have you not used fertilizer?
(See code at end)

c. IF HAS USED FERTILIZER: Have you ever used fertilizer in your seed-beds, or not?
9. Yes 20
X. No 13

d. IF HAS USED FERTILIZER: To what extent have you used fertilizer on your fields? On all your fields, or on the larger part of your fields, or on the smaller part of your fields?
1. On all fields 4
2. On larger part of fields 4
3. On minor part of fields 24
4. Unascertainable 1

13. What is your opinion about mushroom growing?
(See code at end)

[244] 14.a. Have you ever grown mushrooms, or not?
1. Yes 143
2. No 188
— No Answer 2

b. IF NO: Do you have any relatives or relative-like neighbors, who have grown mushrooms or not?
3. Yes 141
4. No 44
5. Unascertainable 4

15.a. What is your opinion about tilapia raising?

[228] b. Have you ever raised tilapia, or not?
1. Yes 104
2. No 215
— No Answer 4

45

16.a. ASK ONLY FARMERS: This year just now beginning, will you do anything for increasing your income, outside of rice farming? [125] [434]

3.	Does not apply	13
4.	Yes	162
5.	No	107
6.	Unascertainable	11

b. IF YES: What various things will you do? [224]

0.	Nothing	3
1.	Mushrooms	42 [235]
2.	Poultry	51 [228]
3.	Fish (Incl. tilapia)	10 [241]
4.	Fertiliser	2
5.	Other, specify_____	84
6.	Unascertainable	6

17. ASK ONLY FARMERS:

a. Last time you planted rice, how many rai of rice did you plant? [243] [433]

1.	4 rai or less	14
2.	5 to 9 rai	25
3.	10 to 19 rai	49
4.	20 to 29 rai	65
5.	30 to 39 rai	53
6.	40 to 49 rai	32
7.	50 to 59 rai	19
8.	60 to 69 rai	14
9.	70 to 79 rai	2
X.	90 rai or more	—
0.	Unascertainable	20

b. And what was the total yield?

1.	120 tang or less	15
2.	121 to 300 tang	28
3.	301 to 600 tang	59
4.	601 to 900 tang	59
5.	901 to 1200 tang	56
6.	1201 to 1500 tang	25
7.	1501 to 1800 tang	10
8.	1801 to 2100 tang	10
9.	2101 to 2700 tang	7
X.	2701 or more tang	3
0.	Unascertainable	21

c. How about the year before--how many rai did you plant?

1.	4 rai or less	16
2.	5 to 9 rai	19
3.	10 to 19 rai	51
4.	20 to 29 rai	67
5.	30 to 39 rai	53
6.	40 to 49 rai	26
7.	50 to 59 rai	20
8.	60 to 69 rai	13
9.	70 to 89 rai	5
X.	90 rai or more	—
0.	Unascertainable	23

L6

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[243]
[433]

17.d. And what was the total yield at that time?

1.	120 tang or less	20
2.	121-300 tang	14
3.	301-600 tang	62
4.	601-900 tang	64
5.	901-1200 tang	50
6.	1201-1500 tang	23
7.	1501-1800 tang	10
8.	1801-2100 tang	8
9.	2101-2700 tang	7
X.	2701 or more tang	4
0.	Unascertainable	31

e. And how many rai did you plant two years back?

1.	4 rai or less	18
2.	5 to 9 rai	17
3.	10-19 rai	45
4.	20-29 rai	72
5.	30-39 rai	52
6.	40-49 rai	26
7.	50-59 rai	18
8.	60-69 rai	12
9.	70-89 rai	4
X.	90 rai or more	—
0.	Unascertainable	29

f. And what was the total yield that time?

1.	120 tang or less	20
2.	121-300 tang	24
3.	301-600 tang	48
4.	601-900 tang	69
5.	901-1200 tang	38
6.	1201-1500 tang	8
7.	1501-1800 tang	7
8.	1801-2100 tang	5
9.	2101-2700 tang	4
X.	2701 or more tang	1
0.	Unascertainable	69

[243]
[435]

18. ASK ONLY FARMERS:

a. Have the changes in the price of rice during the last two or three yea
caused you any worry, or not?

7.	Yes	156
8.	No	104
9.	Unascertainable	33

b. IF YES: What are you doing about it?
(See code at end)

[243]

19.a. Do you, at present, have your own home rice mill, or not?

X.	Yes	105
Y.	No	228

b. IF YES: What various things do you do with the polishings? 125

1.	DA as mill not used	3
2.	Used for feed	99 [243]
3.	Used for food	—
4.	They are sold	3
5.	Other, specify_____	3
6.	Unascertainable	2

c. ASK ALL: During this past year, did your family eat home-milled rice entirely, in major part, in minor part, or not at all? [262]

7.	Entirely	5
8.	For major part	51
9.	For minor part	78
X.	Not at all	199

20.a. As you know, some people have had plenty of chance to learn to read, while others have hardly had any chance. How about you yourself? Are you able to read the Thai language, or haven't you ever had the opportunity to do any reading? [212]

1.	Yes, can read	224
2.	No	109

b. IF R CAN READ: Would you say it is hard for you to read, or easy, or about medium?

3.	Hard	15
4.	Easy	85
5.	Medium	124
6.	Unascertainable	—

c. ASK ALL: How how about writing? How is it with you yourself? Are you able to write Thai, or haven't you ever had the opportunity to do any writing?

7.	Yes, can write	227
8.	No	106

d. IF R CAN WRITE: How much writing do you do? Are you able to sign your name, or can you also write a letter?

9.	Sign name only	63
X.	Can write letter	163
0.	Unascertainable	1

21.a. Suppose there were a factory in Minburi paying 20 ticals per day. Would you apply for a job to work in this factory? [464]

7.	Yes	162
8.	No	159
9.	Unascertainable	12

b. Do you think that someone else from your house would apply for a job there?

X.	Yes	105
Y.	No	211
0.	Unascertainable	17

125

[789] 22. Have you consulted with a medium frequently, occasionally, seldom, or never?

1. Frequently	7
2. Occasionally	4
3. Seldom	66
4. [illegible]	856

[775] 23. Have you been disturbed by a ghost frequently, occasionally, seldom, or never?

5. Frequently	6
6. Occasionally	8
7. Seldom	55
8. Never	264

[641] 24.a. Excuse me, could you tell me, who is now the prime minister of Thailand? If you know, could you please tell me his name?

1. Correct answer	193
2. Incorrect answer	89
3. DK, cannot recall	111

b. Excuse me, could you tell me, who is now the chief of police of Thailand? If you know, could you please tell me his name?

4. Correct answer	167
5. Incorrect answer	24
6. DK, cannot recall	142

25.a. IF R LIVES IN BC COMMUNE: Who is the district officer in Minburi? If you know, could you please tell me his name?

1. DA, as from Bangkapi	194
2. Correct name of present DO	9
3. Correct name of past DO	—
4. Incorrect name	16
5. DK, cannot recall	111
— No Answer	3

b. IF R LIVES IN KY COMMUNE: Who is the district officer in Bangkapi? If you know, could you please tell me his name?

6. DA, as from Minburi	141
7. Correct name of DO	10
8. Incorrect name	—
9. DK, cannot recall	154
— No Answer	28

[434] [829] [556] 26.a. Throughout the world and here in Bang Chan-Khamno Yao too, it is common among men that there must be some who are rich and some who are poor and some who are neither rich nor poor. How about you yourself? Are you rich, or poor or neither rich nor poor?

1. Rich	2
2. Poor	68
3. Neither	363

b. IF POOR: Here in BC-KY, do you think there are many or few people who are poorer than you?

5. Many	30
6. Few	31
7. Unascertainable	7

27.a. Excuse me, but at present do you have a (wife/husband) who lives and eats with you, or not? [125] [592]

1. Yes	255
2. Yes, qualified _____	6
3. No	72

b. IF NO: Excuse me, but is this because you are widowed, separated, divorced, or is there some other reason? [589] [586]

4. Widowed	45
5. Separated	9
6. Divorced	1
7. Other, specify	10
— No Answer	7

28.a. Your own children, all of them that have ever been born, how many are there? [592] [162]

8. None	24
9. One	32
X. 2 to 3	70
Y. 4 to 5	74
0. 6 or more	133

b. How many of your children are still living?

0. None	29
1. One	40
2. 2 to 3	83
3. 4 to 5	82
4. 6 or more	97
— No Answer	2

c. How many of your children have died? [165]

0. None	198
1. One	44
2. 2 to 3	56
3. 4 to 5	17
4. 6 or more	9
— No Answer	9

29.a. Have you ever been ordained as a priest, or not? [793] [792]

1. Yes	187
2. No	31
— No Answer	2

[Male Buddhist (220)]

b. IF NO: In the future, do you want to be ordained as a priest, or not?

3. Yes	20
4. No	11

c. ASK ALL: How many sons do you have twenty years old or over? [593] [162]

5. None	176
6. One	56
7. Two	29
8. Three or more	29
— Unascertainable	43

50

125 29.d. IF R HAS SONS 20 AND UP: Of your sons over twenty, how many have been ordained as Buddhist priests, or not?

[793]	7. DA	212
	8. None	22
[593]	9. One	58
	X. Two	35
[792]	Y. Three or more	16
[162]		

e. Do you have any sons under twenty?

	9. Yes	188
	X. No	108
	— No Answer	37

[793] f. IF YES: In future, do you want your sons under twenty to be ordained as priests, or not?

[782]	Y. Yes	186
	0. No	—
	— No Answer	2

g. IF YES: But aside from your admirable desire to have them ordained, in your true heart how sure is your expectation? Are you very sure or not very sure, or fairly sure that they will be ordained?

	1. Very sure	140
	2. Not sure	26
	3. Fairly sure	12
	4. Unascertainable	9
	NA	1

h. All over Thailand there are some Thai men who are over 50 but have never been ordained as priests. For what various reasons might this happen?
(See code at end)

[461] 30. Suppose there was some work you could do individually, or that could be done in a small group of two or three, or that could be done in a large group. Which way would you prefer to do the work--as an individual, or in a group of two or three, or in a large group?

	8. Individually	60
	9. Small group	55
	X. Large group	202
	Y. Undecided, depends	4
	0. Unascertainable	12

[572] 31. Around here in EC-KY there are some people who have many close friends and there are other people who have few close friends. And how about yourself? Do you have more close friends than most people around here, or about the same as most people around here, or fewer close friends than most people around here?

	5. More than most	62
	6. Fewer than most	94
	7. About the same	154
	8. Unascertainable	23

32. Last night, when you ate at your own house, did you eat with your hands, with fork and spoon, or with spoon alone? 125 [264]

9.	Hands	242
X.	Fork and Spoon	11
Y.	Spoon alone	73
0.	Unascertainable	7

33.a. Have you ever been to a clinic or a hospital? [743]

1.	Yes	624
2.	No	119

b. IF YES: In what various places?

3.	Minburi	156
4.	Bangkok	135
5.	Other place	7
6.	Unascertainable what place.	

c. IF R HAS BEEN TO CLINIC OR HOSPITAL: For what various purposes did you go?

7.	Treatment or hospitalization	123
8.	To bring a patient there	77
9.	Visit relatives or friends	45
X.	Other reason, specify_____	11
0.	Unascertainable	—

34.a. During the last year, did it occur to you frequently, sometimes, or never that you had difficulties falling asleep? [513]

1.	Frequently	73
2.	Occasionally	151
3.	Never	109

b. During the last year, did it occur to you frequently, sometimes, or never that you had a headache? [164]

4.	Frequently	50
5.	Occasionally	174
6.	Never	109

c. During the last year, did it occur to you frequently, sometimes, seldom or never that you lost your appetite?

7.	Frequently	50
8.	Occasionally	173
9.	Never	110

d. During the last year, did it occur to you frequently, sometimes, or never that your hands trembled so as to bother you? [164]

X.	Frequently	17
Y.	Occasionally	93
0.	Never	218
—	No Answer	5

e. During the last year, did it occur to you frequently, sometimes, or never that your heart beat so fast as to bother you?

1.	Frequently	36
2.	Occasionally	154
3.	Never	241
—	No Answer	2

52

125
[513] f. During the last year, did it occur to you frequently, sometimes, or never that you had a nightmare?

4.	Frequently	16
5.	Occasionally	120
6.	Never	197

[546] 35. In your life, how many times have you seen a movie, or haven't you ever seen one?

5.	Ten times and more	161
6.	4 to 9 times	60
7.	1 to 3 times	75
8.	Never	33
—	No Answer	4

[426] 36.a. Excuse me, I'd like to ask about a problem common in rural places all over the world. Do you now have a debt or not?

5.	Yes	192
6.	No	140
7.	Unascertainable	1

b. IF YES: Is your debt now higher, or lower, or about the same as it was two years ago?

8.	Higher	68
9.	Lower	95
X.	About the same	28
Y.	Unascertainable	1

c. IF NO: How about two years ago, did you have a debt then or not?

9.	Yes	61
X.	No	78
Y.	Unascertainable	—
—	No Answer	1

[441] 37.a. Do you or anybody in your household buy certain products in order to resell them at a profit?

9.	Yes	85
X.	No	242
Y.	Unascertainable	2
—	No Answer	4

b. IF YES: Do (you/they) sell things regularly, occasionally or just at festival times?

7.	Regularly	31
8.	Occasionally	49
9.	Just at festival times	5
X.	Unascertainable	—

[241] 38.a. And now, I would like to know a little more about fertiliser. Do you think fertiliser is very good, fairly good or bad?

1.	Very good	106
2.	Fairly good	149
3.	Bad	15
4.	Unascertainable	63

b. And how about mushroom growing? Do you think mushroom growing yields very good money, good money, or little money? 125 [244]

5. Very good money	68
6. Good money	160
7. Little money	49
8. Unascertainable	56

c. And what about Tilapia. Do you think tilapia raising pays very good money, or good money, or little money? [228]

9. Very good money	15
X. Good money	73
Y. Little money	175
0. Unascertainable	70

39. Do you believe in medium strongly, somewhat, or not at all? [787]

1. Strongly	12
2. Somewhat	192
3. Not at all	105
4. Unascertainable	24

40.a. Suppose you could do the same work in another rural place and earn ½ more than here. For example, it would be a place 100 kilometers from here. Would you be willing to leave for that place or not? [166]

5. Yes	118
6. No	203
7. Unascertainable	12

b. IF NO: For what various reasons would you not be willing to go?
(See code at end)

41.a. If you had no land to work in NE-KY would you move to another place or not?

X. Yes	166
Y. No	112
0. Unascertainable	20
— No Answer	35

b. IF NO: For what various reasons?
(See code at end)

42.a. Some people say that, generally speaking people who live in Bangkok have more genuine and lasting happiness than people here in NE-KY. Do you agree or disagree? [369] [829]

1. Agree	136
2. Disagree	134
3. Unascertainable	63

b. IF AGREE: For what various reasons do you agree?

If Agreement (See code at end)

54

125 [369] [829] [793] [792] 42.a. IF DISAGREE: For what various reasons do you disagree?

If Disagreement (See code at end)

43. Do you agree or disagree that all priests are honest and moral men?

I. Agree	197
I. Disagree	90
O. Undecided	40
— No Answer	6

[829] 44. Do you think it is right or wrong for a Thai to marry a Chinese?

1. Right	55
2. Wrong	182
3. Unascertainable	91
— No Answer	5

[775] 45. Do you believe that ghosts bother people? Strongly, somewhat, or not at all?

4. Strongly	40
5. Somewhat	136
6. Not at all	124
7. Unascertainable	28
— No Answer	5

[653] 46.a. During the past year, have there been any activities for the public welfare in BC Wat, or not, to which you contributed labor?

1. Yes	232
2. No	102

b. IF YES: For what various activities did you contribute labor?

_____

_____

c. During the past year or so, have there been any activities for the public welfare in the wat, or not, to which you contributed money or goods?

1. Yes	264
2. No	63
— No Answer	6

[651] d. IF YES: For what various activities did you contribute money or goods?

_____

_____

47.a. How about activities not connected with the wat or with religious ceremonies in the home. During the past year, have there been any such activities for the public welfare in BC-KY, to which you contributed labor, or not?

1. Yes	94
2. No	232
3. Unascertainable	7

47.b. IF YES: For what various activities did you contribute labor? 125
(See code at end) [653]

c. During the past year, have there been any public welfare activities, not connected with the wat or with religious ceremonies in the home, or not, to which you contributed money or goods?

1.	Yes	126
2.	No	197
3.	Unascertainable	8

d. IF YES: For what various activities did you contribute money or goods?
(See code at end)

48.a. Have you attended the ceremony of wisaka bucha at Wat BC every year, or only in some years, or only once in many years, or never? [796]

8.	Every year	156
9.	Only in some years	135
X.	Once in many years	21
Y.	Never	14
0.	Unascertainable	7

b. Have you attended the ceremony of gilding the Buddha's footprint at Wat BC every year, or only in some years, or only once in many years, or never?

1.	Every year	225
2.	Only in some years	62
3.	Once in many years	17
4.	Never	9
5.	Unascertainable	20

49.a. Excuse me, this is a strange question, but do you own a pair of shoes? [291]

6.	Yes	136
7.	No	197

b. Of what various materials are your shoes made?

8.	Leather	65
9.	Cloth, canvas	87
X.	Other, specify_____	11
0.	Unascertainable	
—	No Answer	1

50.a. In your household, is there a hatchet, or not? [412]

1.	Yes, hatchet	309
2.	No	24

b. (In your household), is there a pressure lamp, or not? [416]

3.	Yes, pressure lamp	188
4.	No	145

c. (In your household), is there a flashlight or not?

5.	Yes, flashlight	271
6.	No	61
—	No Answer	1

125
[412] 50.d. (In your household) is there a pair of scissors of any kind or not?
7. Yes, scissors 719
8. No 124

[207] e. (In your household) is there a radio or not?
9. Yes, radio 47
0. No 896

[402] f. (In your household) is there a winnowing machine, or not?
X. Yes, winnowing machine 108
Y. No 831

[243] g. (In your household) is there a windmill, or not?
1. Yes, windmill 161
[402] 2. No 778

[805] 51. Do you have a wrist watch, or not?
[405] 3. Yes 79
4. No 852
— No Answer 1

[231] a. Here in your household, how many buffaloes do you own?
5. None 81
6. One 87
7. Two 67
8. Three 41
9. Four or more 97

b. (Here in your household) how many pigs do you have?
0. None 321
1. One 8
2. Two 2
3. 3 or more 1
— No Answer 7

[235] c. (Here in your household) how many chickens do you have?
4. None 35
5. 1 to 2 7
6. 3 to 4 17
7. 5 to 9 31
8. 10 or more 863

d. (Here in your household) how many ducks do you have?
0. None 908
1. 1 to 2 9
2. 3 to 4 16
3. 5 to 9 58
4. 10 or more 43

57 125

53. Which of the following six qualities do you feel is the best thing for man: Virile, friendly, educated, rich, religious, lazy? [577]

5.	To be virile	2
6.	To be friendly	31
7.	To be educated	56
8.	To be rich	43
9.	To be religious	126
X.	Not to be lazy	57
Y.	Unascertainable	15
—	No Answer	3

54. Do you drink too frequently, occasionally, seldom, or never? [272]

1.	Often	22
2.	Occasionally	68
3.	Seldom	158
4.	Never	88

55. Do you drink whiskey frequently, occasionally, seldom, or never? [273]

5.	Often	17
6.	Occasionally	73
7.	Seldom	157
8.	Never	76
9.	Unascertainable	—

56.a. In Thailand are many people who smoke opium. Excuse me, during your life have you ever smoked opium, or not? [276]

1.	Yes	45
2.	No	287
3.	Unascertainable	1

b. IF NO: Excuse me, do you think there is anything wrong with smoking opium, or not?

4.	Yes, it is wrong	281
5.	No, it is not wrong	5
6.	Unascertainable	1

c. IF SOMETHING WRONG: What are the various reasons why you think it is wrong?

7.	Bad for health	43
8.	Habit forming	42
9.	Waste of money	220
X.		
Y.	Other reasons, specify_____	40
0.	Unascertainable	

57.a. In the last month, how many times did you go to Khmuri or didn't you go at all? [484]

0.	Did not go at all	67
1.	Once	35
2.	2 to 4 times	130
3.	5 to 9 times	39
4.	10 to 19 times	30
5.	20 times or more	20
6.	Unascertainable	4

58

125
[484]

57.b. IF R DID NOT GO DURING LAST MONTH: How many months ago was the last time you went to Nimburi?

7.	Within last 3 months	34
8.	More than 3 months ago	25
9.	Never been to Nimburi	1
X.	Unascertainable	3
—	No Answer	4

58. This past year, how many times did you go to Bangkok, or didn't you go at all?

0.	None	71
1.	Once	56
2.	2 to 4 times	90
3.	5 to 9 times	28
4.	10 times or more	67
5.	Unascertainable	1

59. In your life, how many times have you been to Don Muang Airport, or haven't you been there at all?

6.	None	148
7.	Once	58
8.	2 to 4 times	72
9.	5 times or more	52
X.	Unascertainable	3

60. In your life, how many times have you been to the annual agricultural fair or the Agricultural Experimental Station at Bang Khan, or haven't you been there at all?

0.	None	227
1.	Once	47
2.	2 to 4 times	45
3.	5 times or more	14
4.	Unascertainable	

61. In your life, have you ever been beyond the boundaries of Thailand, or not?

X.	Yes	13
Y.	No	318
0.	Unascertainable	2

62.a. Have you ever lived in Bangkok, or not?

1.	Yes	117
2.	No	216
—	Unascertainable	

[464]

b. IF YES: What various duties or jobs did you have when you lived in Bangkok?

4.	Soldier	37
5.	Police	10
6.	Student	22
7.	Artisan	1
8.	Laborer	23
9.	Other, specify _____	33
0.	Unascertainable	2

62.a. IF YES: What is the total number of months that you lived in Bangkok? 125 [166]

5.	One year or less	31
6.	13 to 24 months	30
7.	25 to 60 months (5 yr)	21
8.	More than 5 years	35
9.	Unascertainable	

63.a. Is there anyone now eating and living in your house who once lived in Bangkok, or not? [592] [166]

9.	Yes	36
1.	No	129
7.	Unascertainable	1

b. IF YES: What is your relationship to this person(s)?

1.	Son	9
2.	Daughter	6
3.	Father	2
4.	Mother	-
5.	Brother	2
6.	Sister	13
7.	Other relative	14
8.	Unascertainable	-

c. IF YES: At what age did he leave BC?

1.	Below 15 years	5
2.	15 to 19	8
3.	20 to 29	15
4.	30 years or more	5
5.	Unascertainable	4

d. IF YES: How long did he (she, they) live in Bangkok?

6.	Less than one year	5
7.	1 to 4 years	19
8.	5 to 9	6
9.	10 years or more	5
X.	Unascertainable	1

64.a. Is there anyone who has previously eaten and lived in your house and who is now working in Bangkok, or not?

1.	Yes	92
2.	No	241
3.	Unascertainable	

b. IF YES: What is your relationship to this person(s)?

4.	Son	35
5.	Daughter	23
6.	Brother	16
7.	Sister	8
8.	Other relative	18
9.	Unascertainable	—
—	No Answer	2

60

125 [166] [592] 64.a. IF YES: At what age did he leave BC?

1.	Below 15 years	6
2.	15 to 19 years	28
3.	20 to 29 years	30
4.	30 years or more	5
5.	Unascertainable	6

d. IF YES: For how long has he (she, they) been gone from BC?

6.	Less than one year	12
7.	1 to 4	45
8.	5 to 9	19
9.	10 years or more	19
X.	Unascertainable	

[464] [463] e. IF YES: What various duties or jobs does he (she, they) do in Bangkok?

1.	Housewife	17
2.	Unskilled laborer	19
3.	Skilled laborer	13
	Armed forces	17
	Service	9
	Employee	5
4.	Other (retired, selling things)	2
5.	Unascertainable	6

[166] [593] [602] f. IF YES: During the last year, have you seen this person(s) several times, once, or not at all?

9.	Several times	65
X.	Once	16
Y.	Not at all	8
0.	Unascertainable	3

g. IF YES: Does he (she, they) make regular remittances to this house?

X.	Yes	31
Y.	No	56
0.	Unascertainable	5

[207] 65. Do you listen to the radio regularly daily, occasionally, seldom, or never?

6.	Regularly-daily	45
7.	Occasionally	66
8.	Seldom	158
9.	Never	60
—	Unascertainable	14

[525] 66.a. Do you play the lottery regularly, occasionally, seldom, or never?

1.	Regularly	80
2.	Occasionally	56
3.	Seldom	220
4.	Never	38
5.	Unascertainable	—
—	No Answer	1

b. IF REGULARLY, OCCASIONALLY, OR SELDOM: Suppose you were to win the second prize of 10,000 baht. What various things would you do with this money?

(Spec Info)

	Qu 11	Qu 13	Qu 15A	
1. Positive, no evidence: very good, good, nice	103	114	77	125 241
2. Positive, with evidence: good results, specific statements	47	120	95	244
3. Neutral or mixed	11	80	6	228
4. Negative, no evidence: no good, bad, of no use	9	5	15	
5. Negative, with evidence: difficult to apply in deep water, must keep using it, too expensive, same results as without fertiliser	33	13	80	
6. Positive, qualified: Fertiliser too expensive.	13	—	1	
7. Positive, qualified otherwise: only for high land; very hard to purchase; requires to keep on using it	32	18	18	
8. Respondent states he has no opinion	54	31	26	
X. Negative, qualified: It's not quite good, it depends on the soil	4	4	3	
0. No answer	4	3	1	
9. Respondent's attitude not ascertainable	23	5	11	

	Qu 12B	
0. D.A.	85	125 241
1. Too expensive	78	
2. Difficult to purchase	15	
3. Not fit for low land	39	
4. Soil not suitable	3	
5. No ascertainable reason given	28	
6. Too little land	7	
7. Other reasons	56	
8. Have never used it before. Do not now either	12	
X. N.A.	105	
9.	21	

	Qu 18B	
X. N.A. Unascertainable	60	125 243 435 458
0. D.A.	151	
1. Nothing, cannot do anything	70	
2. Grow mushrooms	12	
3. Raise poultry	15	
4. Raise fish (including Tilapia	7	
5. Use fertiliser	—	
6. Find job as laborers	6	
7. Other: try to find new seed, sell vegetables, borrow money from neighbors, keep rice until price goes up, economize, send sons to work	86	

		Qn 117	Qn 118
125	1. Too old to move, old man	33	12
621	2. Easy to make living here, more comfortable, happy here	36	8
	3. Loves place, born here, would like to die here	37	26
	4. Doesn't like to leave area	10	4
	5. Relatives are here, likes neighbors, family here	32	28
	6. Own land	19	15
	7. Can't move her house, worried about housing in new place	7	1
	8. Change career, use other occupation	2	18
	9. Other: Big family, had to move too far, wouldn't know how to find a new place, people here one can trust, will help you	39	13
	0. D.A.	130	205
	X. No answer, unascertainable	7	23

		Qn 478 (labor contrib)	Qn 479 (money contrib)
125			
653	4. D.A.	238	208
	5. School	23	21
	6. Bridge	36	36
	7. Canal	26	8
	8. Road	23	23
	9. Other: district office, festival shelter, marriage of neighbors	8	8
	0. N.A.	1	9
	X. Rest house	5	5

		Qn 669
125	1. Make merit, give alms, buy a golden belt, build a mosque	172
525	2. Purchase land	91
	3. Trade, build a market, open rice mill	34
	4. Spend for the family, unspecified, improve group condition	68
	5. Build a house	40
	6. Purchase of farming equipment or stock	22
	7. Pay debt	7
	8.	
	9. Other: Offer sons to Thai army, to be carpenter, keep money in bank and collect interest, educate children, benefit country	44
	0. D.A.	39
	X. No Answer	2

43

Question 29.b. Reasons respondents give for why some old men have not served in priesthood (multiple choice replies).

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793
792
828
829

Immediate deprivation	
Dependents (worry about family, have wives, they have many children)	78
Financial reasons (they are very poor, they have no money, their parents are very poor, in debt)	56
Property (worry about property and professions)	15
Life situation	
Married too young (too early, have wives early, "fell in love, got married, acquired dependents, so could not get ordained")	50
Wrong orientation to life (they believe in a wrong way of life, they are lazy and not religious, they pay too much attention to worldly things, they cannot pray, "they don't think of their parents enough, they think only of themselves, and only of the present")	19
Religious belief system	
Apathy to priesthood (they do not like it, feel indifferent about ordination, have no intention of being ordained)	43
Indifference to Buddhism (they are not true believers, they did not participate in religion, "they aren't sons of Lord Buddha," "they don't love their race or Buddha")	19
Qualification	
Illiteracy, ignorance (they cannot read, they are ignorant, "afraid cannot abide by teachings and discipline," "they cannot read so they are ashamed if they become priest")	21
Personality (they are ruffians, they are disorderly drinking men, they are poorly brought up, they are not good enough, mental disturbance)	11
Background	
Lack of parental supervision (their parents can't control them, "nobody would give the advice and so they did not enter the priesthood)	5
Parental objection ("Some men have quarrels and their parents don't want them ordained," "they cannot receive permission from their parents")	2
Other reasons ("Because such man did not get ordained in previous incarnation, either," "because he has sinned in the past life and has had luck in this life," "they have to be soldiers," "they don't know the merit of sin," "they are too old, their merit did not reach the certain point so they did not have the chance," "they have children and sometimes feel ashamed before monk who have been ordained," "they forget")	8
No answer	43
Don't know, unascertainable	37

64

125 Question 42.b. Reasons for Agreement (multiple choice replies)
369
829

Amount of effort in earning a living
- Earn living more easily, lighter work, a farmer has to work too hard, life is hard here--easy there 29
- Can work indoors, needn't work in sun and rain 19
- Other (living is easy if you have money, don't have as many worries as farmers, can trade more easily) 3

Availability of jobs and money
- They have salaries so don't have to worry 11
- Earn more money, earn more money for pleasure, earn money more quickly, can make money in commerce 11
- They have money, they have properties 10
- Can find job more easily 10
- Good occupations 1

Conveniences
- More comforts 10
- They can get everything they want, can get everything easily 7
- Can find food more easily, it's more plentiful, food is better 6
- They have communication, transportation, water and light 5
- Everything is convenient 4
- Other (more privacy, children have a better chance for education, many pleasures, better living, no troubles) 5

Other Reasons
- More civilized, they have "knowledge," they can write, they govern the country, Bangkok is progressive, wherever you live you are happy if you behave well 8

No Answer 8

Question 42.c. Reasons for Disagreement (Multiple choice replies)

Cost of Living (Cost of living too High, must spend too much money, everything more expensive, food is expensive there) 34

Availability of jobs and money (Easier to make living here, no way of earning money there, hard to find a job there) 23

Dangers of Bangkok life (Fires, traffic, wars, too much fighting there, cheating, robberies, bandits) 17

No security (Poor people starve there, occupation is not permanent, economically less secure) 14

Urban Atmosphere (It's too crowded, the weather is bad, the air is bad, It's too noisy, too many mosquitoes, no kindness) 14

Integration in Bang Chan, lack of it in Bangkok (Work is harder here--but you have peace of mind, people have no strength or unity there, plenty of friends and relatives here, can live in own house here) 12

Bang Chan is O.K. (There is plenty of food (vegetables) here, life is easier and more convenient here) 9

Specific qualifications needed (Don't have enough knowledge, education, or experience to be happy there, must be a skilled worker) 7

Question 42.c. (Cont'd)

Need for Money in Bangkok (Only happy there when have plenty of money)		125
Amount of effort in earning a living (Have to work every day there	6	369
Other reasons (Too many poor people there, many illnesses there, the life of the people there depends on the farmer, people from Bangkok always go to the country when anything bad happens, people can be happy both places, different people have different hearts)	4	829
No Answer	12	
Don't know	4	
	5	

Question 46.b. For what various activities did you contribute labor? 125

Earth work		653
Earth work at Wat	15	
Earth work at Mosque	7	
Earth work, unspecified (digging dirt, filling low places, digging klong, loading and unloading earth and bricks)	53	
Cement Work		
Cement work at Wat (moved cement bags, laid concrete floor)	12	
Cement w ork, unspecified (building cement sidewalks, helped make concrete, poured concrete)	14	
Building and Repairs		
Building sala (pavilion, repairing pavilion)	51	
Building mosque (repairing Surao porch)	8	
Built priest house, construction work in wat, latrine in Wat, repair crematorium	8	
Building bridge	21	
Building road	13	
Constructionwork, unspecified (carried posts, repair a building, carpentry)	7	
Services		
At Wat fair (helped cook and serve, helped manage, sweeping)	27	
At Surao fair (helped cook and serve)	3	
Services, unspecified (boiled water, cooked, carried water)	15	
Guilding the gold leaf, miscellaneous labor at footprint guilding festival)	7	
Priest's funeral (cooked, helped at cremation)	7	
Other (served at Kathin ceremony, solicited money for Wat)	3	

Question 46.d. For what various activities did you contribute money or goods? 125

To the Wat, unspecified	19	431
Contribution, unspecified	19	651
Construction activities		
To build pavilion (sala), to repair pavilion	57	
To make path, build street on Wat grounds	27	

125 Question 16.d. (Cont'd)

431 Construction activities (Cont'd)

651 To the Wat (to repair Wat, construction in Wat, fixing walls) 27

Contribution for building materials (buy cement, concrete floor, wood and tin, for new cement sidewalks, water tank) 21

To Sunee (general fund, repair) 9

To build a bridge 8

To buy a generator 6

To build priest's house bathroom 5

To build preaching hall 3

[796] Ceremonials

[764] For ceremonies, unspecified 12

To guild the golden leaf 27

To cremation (to build crematorium; to cremate father, people without relatives; to build corpse go-down; priest's funeral) 12

To Wat fair 10

Other (to Katlin, to revise the Buddhist sacred book, to ordain priest, for building Buddha figure, to New Year festival, for dancing girls) 11

To Sunee fair 4

Food and related donations

Gave rice, unspecified 5

Gave rice (food) for Wat, priests 18

Gave rice for Wat fair 7

To buy utensils (including cooking utensils) for Wat 6

To buy utensils for Sunee 6

Gave food to Sunee 1

APPENDIX C

Cornell Methodology Project,
Bangkok
2 May 1955

Interviewer Guide

Bang Chan Survey 1955

I. INTRODUCTION

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This survey is a multipurpose study. One of its objectives is to help determine HOW one can best use a technique such as a survey for community research in South East Asian villages. A survey is one of several techniques used in community research by Western social scientists. The study of a community permits to acquire knowledge about what is essential and important in the life of a village and town. Once a store of knowledge is available and described, the door is being opened for the introduction of improvements and improvements based on scientific knowledge and not based on hunches and speculative thinking. However, the instruments of social science research still bear great limitations. Life processes are the laboratory of research. Thus, dynamic processes are faced which make research complex.

Another objective of this survey is to study the meaning in a given cultural setting of variations in question wordings, different types of answer categories, and various types of questions in terms of question structure.

Finally, an attempt is made as well to collect some data from a typical rice village in the hinterland of Bangkok for supplementing cultural anthropological hypotheses and findings.

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This interviewer guide is to assist the interviewer in his task. Here anticipated difficulties and weaknesses in this survey are brought to light in order to make it easier for the interviewer to avoid traps inherent in field situations. First of all, it should be noted that replies to ALL QUESTIONS ARE REQUIRED. It means that a given number for each question or subquestion must be ENCIRCLED ON THE ANSWER SHEET OR THE RESPONDENT'S REPLY MUST BE REGISTERED IN THE PLACE PROVIDED FOR. Unless strict adherence to this rule is obtained from each interviewer, questionnaires will contain omissions and become valueless. Such questionnaires would signify a loss of effort, a loss of time, and unnecessary exposure of respondents to interviews. Secondly, an interviewer who has any doubts about procedural points, should discuss them without any hesitation either with the field director, or with his deputy, Mr. Textor, or with Mr. Civ, who, all three, consider it their responsibility to clarify all possibly confusing matters and to give such training to each interviewer as to enable him to perform his task with ease.

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II. DEFINITIONS

Definitions are here provided only for a few basic terms within the context of this survey. An attempt will be made to discuss the many concepts contained in the questionnaire before the beginning of the actual field work, as the desirability to keep this guide short makes it unadvisable to go into lengthy details at the present time.

A household is a single person or a group of persons making one economic unit and distinguished as one kitchen unit. It is likely that members of the same household sleep under one roof (or roofs) belonging to one person, but the main criterion of the definition is the kitchen unit. With each kitchen goes one household. There is occasionally more than one household under one roof; this is found when more than one kitchen is encountered in one dwelling unit.

The head of the household, shortly referred to as HH, is the person whom other members of the household consider to be the head and who lives in this household - we exclude absentee heads of households.

Relationship to the HH is to be designated as whatever applies among the following categories: husband, wife, son, daughter, father, mother, mother-in-law, or "other relative."

Respondent, shortly referred to as R., is the person being interviewed. The R. should preferably be the HH, or, in the absence or nonavailability of the HH, an articulate adult member of the household.

Articulate member of the household is a person in a given household who could be considered eligible to substitute as R. for the HH. An articulate member of the household is another member of the same household as the HH. Such an articulate member should be an adult in the position to express himself without unusual difficulties and he is expected to have a scope of views not much less limited than those of the HH.

III. PROCEDURE

Our survey will be conducted in Bang Chan, shortly referred to as BC. This is a rice village about 20 miles from Bangkok. The Cornell Research Center has been working in this village for many years and friendly relations have been established all over. Senior members of the Cornell Research Center have taken great pain in maintaining good rapport with the villagers and are, naturally, anxious that nothing should occur to damage the established fine relations. Each interviewer is expected to keep this in mind all the time while in BC.

The basic unit in the social structure of RC is the household. A number of households is grouped in a hamlet under a headman. We will bring our survey altogether into seven hamlets. The total number of households as defined by us above will be in the neighborhood of 350. Our target is to secure one interview from each household kitchen unit. 124 621

Field conditions will be arranged such as to give each interviewer the best possible comfort and working facilities. Tentatively, interviewing time is set for 8 to 11 and 16 to 19 hours. However, weather and the experience of the first interviewing days will dictate the fixing of a more definite or a more flexible time schedule. After the end of each morning and afternoon interviewing period, the interviewers will deliver their completed interviews to Mr. Civ who will check the same for completeness. 124

Interviewing areas will be assigned and designated to each interviewer in due time. Then, the interviewer will proceed similarly or just as reported in notes on a trial interview by Mr. Civ: "I saw a man sitting on the ground in front of the house. With a smiling face, I made a Thai salute and said: Hello! Good morning, Sir, I would like to ask for your permission to ask you something about the life of Thai farmers as well as about the way of life in general... Sitting down near the R., I said smoothly: Excuse me, Sir, are you the KH?... How many kitchens do you have in your house? Only your family living in the house?... Thank you, Sir... Now, I am starting the questions, please be kind enough to answer, you will of course."

Should the potential R. ask the interviewer about his activity, the suggested reply is: I am doing research for the Cornell University.

Should the KH tell the interviewer that he has no time at the given moment, then the interviewer will attempt to fix an hour at the convenience of the KH.

Should any difficulty arise, it is suggested that the interviewer report the trouble as soon as practicable to the field director or his deputy.

Each interviewer is required to adhere rigorously to the phrasing of the questions in the questionnaire. Below, indications are provided for probing in situations, where it might be advisable. Probing is using some unbiasing short phrases for strengthening the question stimulus. Just what exactly is included in a probe will depend on the given situation, the nature of the R. and the degree of rapport between interviewer and R. At times, a short period of silence of perhaps 15 to 20 seconds might well produce the desired stimulus and make the R. speak after his first initial hesitation.

124 Each interviewer is actually given three instruments
125 to work with: (1) The questionnaire according to which he asks the given questions VERBATIM AND IN THE ORDER INDICATED, (2) The answer sheet on which he registers IMMEDIATELY AFTER EACH QUESTION RESPONSE the obtained replies, and (3) the interviewer checkform which is filled out after the completion of the entire interview, as soon as practicable.

IV. DISCUSSION OF QUESTIONS

The questionnaire consists of 66 questions according to the devised numbering system. Actually, many of the questions are frequently made up to include one or more subquestions. EACH QUESTION REQUIRES AN ENTRY ON THE ANSWER SHEET. However, 26 questions contain subquestions which are conditional. These are to be asked only in the case that a given condition is fulfilled in the response to the main questions. The conditional subquestions carry the following numbers: 3c, 6b, 9 b and c, 10 b, 12 b, c, and d, 14 b, 16 b, 18 b, 19 b, 20 b and d, 26 b, 27 b, 29 b, d, f, and g. 33 b, 36 b and c, 37 b, 40 b, 41 b, 42 b and d, 47 b and d, 49 b, 56 b and c, 57 b, 62 b and c, 63 b,c, d, 64 b, c, d, e, f, and g, and 66 b.

Six questions should be addressed to FARM OPERATORS ONLY. These questions are: 9, 12, 16, 17, 18 and 41. ALL OTHER QUESTIONS SHOULD BE ASKED OF ALL Rs.

The questions are formulated in such a way as to provide certain answer categories. These are: yes-no, agree-disagree, right-wrong, calibrated, multiple choice and open-ended categories. The way to handle these answer categories has been discussed in length.

At this point, attention is directed to the open-ended reply category, because it is more difficult to deal with. One procedure would be to write down verbatim a response obtained from the R. However, a R. might, at times make a speech and the interviewer would then not be in the position to register all that is said. He would not, furthermore, consider it necessary to register what had been said not connected with the question asked. Therefore, the interviewer would likely to be summing up the response. Such pertinent summaries are most important and frequently made. In this questionnaire, it had been attempted to anticipate the response categories to open-ended questions on the answer sheet to a great extent, as they are likely to fall in given patterns. In such cases, the likely answer categories are found on the answer sheet. On the other hand, open-ended questions remain to be filled in by the interviewer, when lines instead of categories are found on the answer sheet. Here, a verbatim rotation of the R.'s pertinent points is essential. In case of doubt, each interviewer is encouraged to discuss such

125 items the same day with Mr. Texter or with Mr. Civ. As the
124 space provided on the answer might not be sufficient for this purpose, the back page of the interviewer checkform should be used and an asterik should be placed in the space provided for the reply on the answer sheet. It is expected that for these questions one to three line replies would be of normal length. Such replies, posted on the backpage of the interviewer checkform, can be written in Thai and sufficient space should be left between the various notations for an English translation to be fitted in.

Before an item by item discussion of the questions, just two more remarks about probing. Probing is chiefly used in two kinds of situations: (a) when a R. is slow in replying to a question, or seems not to have understood a given question, or when he might try to avoid a reply by stating that he does not know (D.K.) or "does not recall"; in such cases the question or relevant parts of it are repeated verbatim; and (b) when a R. gives an irrelevant answer and the interviewer is prompted to probe with the intention to stimulate a response to the point of the question; here, usually more probing will be necessary than under (a).

DO NOT PAY ANY ATTENTION TO THE "CLM." COLUMN NUMBER DESIGNATIONS which follow question numbers on the answer sheet.

Qu. 2: Write in the precise age obtained on the line behind the corresponding age group. Below, you find a table of the zodiac years ranging from 24 to 73, which will provide you with a check and an adjustment of the frequently approximative age indicated by the R. For instance, assume that a R. says he is 50 years old, when you ask him: How old are you: You then ask him in what zodiac year he has been born. Assuming his reply is "khaan," you then read from below table "53 years" and this is the age which you register in the line behind: " 50 to 59" age group.

[805] Table of zodiac years

maaee	24, 36, 48, 60, 72	chalua	30, 42, 54, 66, 78
woog	23, 35, 47, 59, 71	khaan	29, 41, 53, 65, 77
rukha	22, 34, 46, 58, 70	tho	28, 40, 52, 64, 76
coo	21, 33, 45, 57, 69	maroong	27, 39, 51, 63, 75
kun	20, 32, 44, 56, 68	maseng	26, 38, 50, 62, 74
chuad	31, 43, 44, 67, 79	maaia	25, 37, 49, 61, 73

Qu. 6: You ask the R.: Do you smoke and offer him simultaneously a cigarette.

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Qu. 7: Some reply to this question is desirable and probing might be at times required. In the case that one reply to the point is obtained, no further probing is necessary. If there is no answer or an answer not to the point, probe once by repeating the question and, if necessary, by adding: You probably can tell me something about the new things.

Qu. 8, 9c, 11, 12 b, 13, 15 c, and 16 b ARE AS WELL QUESTIONS where probing might occasionally be required. When we talk of fertiliser, we have exclusively artificial fertiliser in mind and not manure or compost.

Qu. 17 a, 17 b, 17 c, and 17 d are provided with lines behind the given answer categories on which the figures in rai or tang respectively should be registered in the corresponding place just as you handle this in Qu. 2.

Qu. 18 b: This is perhaps a difficult question for some Rs., as simple as it might look. Probing-eventually the use of a silence period for stimulating embarrassment and response-is recommended, when no first reply is forthcoming.

Qu. 46 and 47: Pretests have indicated that the concepts of public welfare work and the distinction of what are contributions in connection with the Wat or religious activities and other contributions are not very clear in the minds of many Rs. Proceed according to the principle of sound logic for obtaining replies to Qu. 46 as distinguished from Qu. 47. In these questions some explaining might be exceptionally well justified.

Qu. 58: City limits of Bangkok are defined as follows: Present city limits at Rm 11, Lord Prov.

Qu. 62 b and 64 c: Probe for each duty and job. You can consider this like a multiple choice question, as the same R. might refer to more than one duty or more than one job held.

Qu. 66 b: This last question is again an open-ended question of the projective type. It is expected that respondents will have no difficulties in expressing their wishful thoughts. You can probe freely, if need arises.

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[For information on the acceptance of innovations by the people of Bang Chan, see Category 116, pp. iv, 6-37 and 43.]

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[For information on contacts between Central Thai and Western culture, see Category 116, pp. iv, 6-22, 36-37 and 43.]